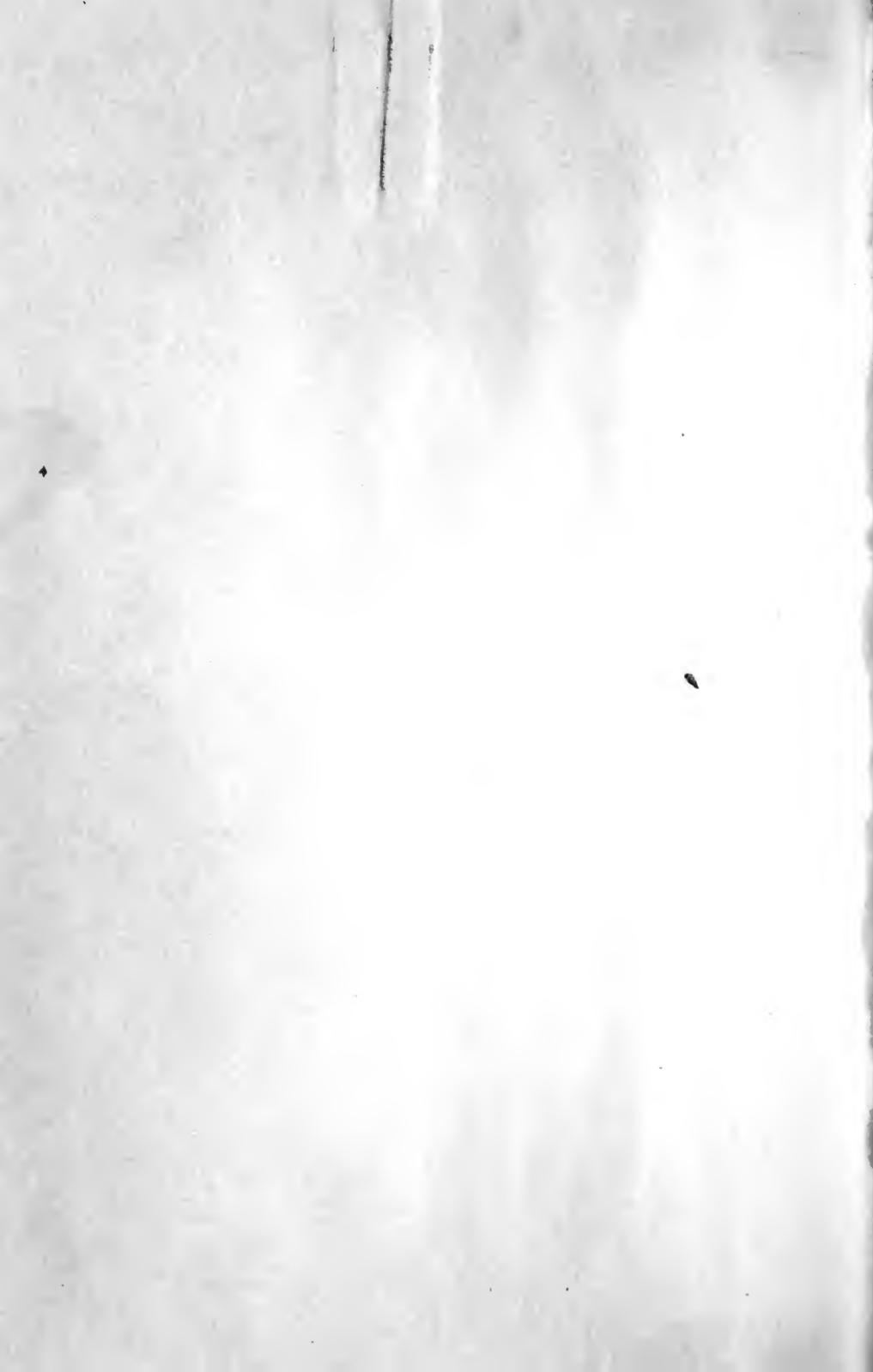


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No. 5.

How to Secure and Retain

ATTENTION.

BY

JAMES L. HUGHES,

INSPECTOR OF SCHOOLS, TORONTO, CANADA; AUTHOR OF
"MISTAKES IN TEACHING."

A REVISED EDITION, WITH MUCH NEW MATERIAL.

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PREFACE.

"THE teacher who fails to get the attention of his scholars, fails totally." This truth justifies the preparation of a teachers' hand-book dealing exclusively with the subject of Attention. Some teachers are gifted naturally with a high degree of power to gain and hold the attention of their pupils. All teachers may add to their power in this as in all other departments of their work. To help them to do so has been my object in issuing this book.

The present edition has been very much enlarged, and some important additions have been made to it.

The edition of Messrs. E. L. Kellogg & Co. is the only authorized edition published in the United States.

J. L. H.

TORONTO, December 27, 1



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SECURING AND RETAINING ATTENTION.

Chapter X.

“The great skill of the teacher is to get and keep the attention of his scholars.”—LOCKE.

“Genius is nothing but continued attention.”—HELVETIUS.

“There can be no teaching without attention.”—HART.

“Without the faculty of perception all teaching, all machinery for communicating ideas to the young, are useless. They may have ears, and all the other organs of sense, but they will neither hear, nor see, nor perceive; for they will pay no attention.”—NIEMEYER.

“Throughout the entire course of school training, the chief reliance of memory must be the freshness and force of attention both to things and words.”—SWETT.

“Memory is the result of attention. The art of memory is the art of paying attention.”—PAYNE.

“Attention is perhaps the most important activity of the mind, since a mental fact only exists for us in so far as we attend to it.”—RYLAND.

“In order to make progress in intellectual culture, habits of attention must be gained.”—CALKINS.

“Mental power is, to a large extent, the power of attention.”—BROOKS.

“Intensity of sensation, whether pleasing or not, is power.”—BAIN.

“There is no distinct thinking, no vivid feeling, and no deliberate action without attention.”—SULLY.

Attention is the Direction of the Powers of the Mind to the Impressions Received through the Senses or to Subjects of Reflection.—A thousand impressions may knock for admission to our mind at once. We have the power of abstracting one of these from the mass and of examining it alone. This power of selecting one object or subject for special study is the basis of attention. When our eyes are open every object in front of us and within range of our vision makes a picture on the retina. We do not see all these pictures, however. We see only those of which the mind is cognizant. Seeing is the result of mental action in specially looking at some of the images on the retina. I see those things which are strange to me, or of most interest to me, or what is most in harmony with my leading mental characteristics or tendencies. Ten individuals looking at the same landscape from the same point of view see in it as many different classes of objects. The painter recognizes its beautiful scenery, the geologist its formation, the botanist its flora, the sportsman its forests or streams, the farmer its fields of grain or pasture, and so on with the rest. But the pictures seen by the entire ten taken collectively do not constitute the sum of the images made on the eye of one individual. The same pictures are in each eye, but each mind chooses, or is attracted by a different set of pictures, or gets from the same picture a different series of impressions. The same individual sees different things in the same scene at different times, although the scene remains unchanged. We may have sat in a room every day for months, without recognizing a certain pattern, or spot of color in the curtain or car-

pet or wall-paper. Finally we notice it. Is it because the pattern or color has changed? Is it because its image is now made in our eyes for the first time? No. The picture has been made on the retina every time we have sat in the room, but the mind has now for the first time recognized or examined it. It has appealed to us for months in vain, but at length we have noticed it, or given it our attention. An experienced designer would have seen it and recognized its relationship to its surroundings on his first visit to the room.

It is also true of the other senses, that they carry a vast number of messages daily to the mind of which it takes no notice whatever. In a city many sounds reach our ears at the same instant, and we may not be conscious of the fact at all. The noise of the factory, of the street-cars, of the locomotive engines, the whistling of steamboats, the cries of street vendors, and many other sounds may beat their tattoo on the drum of the ear, but the mind may be so fully engaged with other things as to be utterly unable to pay the slightest attention to them, and if so we will not hear them. The suffering body may even send its signals of warning to the brain, without arousing it to take action.

Henry Clay was forced to speak on one occasion in reply to an opponent, when he was in very delicate health. Before rising he requested a friend who sat beside him to stop him at the end of twenty minutes. When the specified time had passed his friend pulled Mr. Clay's coat, but he continued to speak. His friend pinched him several times, and finally ran a pin into his leg. Mr. Clay paid no attention. He spoke for more than

two hours, and then sank exhausted, and upbraided his friend for not giving him a signal to stop at the proper time. The signals had been given. His suffering body had sent repeated messages of alarm to the brain, but his mind was so completely occupied in attending to the subject he was discussing, that these messages had never been received.

A wounded Prussian soldier whose foot had to be amputated asked for his flute, and became so engrossed in the music he was performing that he did not seem to notice the operation of the surgeon, but continued to play without missing a note of the tune he was playing.

It is a well-known fact that we may cease to be conscious of physical suffering, if we can become engrossed in an interesting book, in the society of vivacious friends, in some delightful employment, or in any other way. Does the physical disturbance cease under these circumstances? Certainly not. The wounded or afflicted part sends its complaining messages of distress as regularly and as definitely as usual, but the mind is away from the pain telephone attending to other things.

The conclusion we must reach from a careful consideration of these and similar illustrations is, that the mind may become so completely absorbed in one sensation, or one subject, as to be totally unconscious of all other sensations or subjects. When it is so occupied it is giving undivided attention to the subject in hand. It is only then that the mind can do its best work in study or original investigation, so that the power to fix the energies of the mind steadily on one subject is the most important intellectual power the teacher can ever develop in his pupils.

Teachers have a specially difficult task in keeping the attention of a number of minds of varied tendencies engaged with the same subject. It would be much easier for them to give full attention to subjects of their own choosing, but the attention needed in the school-room requires the direction of the minds of all the pupils to the subjects introduced by the teacher.

Without attention nothing can be learned. We do not perceive unless we give attention. If we do not get perceptions we have no conceptions, and therefore no memory because we have nothing to remember. The more complete and prolonged our attention the more definite our perceptions, conceptions, and memory. Poor memories result from indistinct perceptions, and these come from inattention. Attention not only increases knowledge, it adds to our power of gaining knowledge.

The teacher who cannot secure and retain attention must be a failure, whatever his other qualifications may be. Locke said: "Whilst the teacher has attention he is sure to advance as fast as the learner's ability will carry him; and without attention all his bustle and bother will be to little or no purpose."

Each pupil must be willing to receive the thoughts his teacher has to communicate, and his mind must not be preoccupied, or actively engaged with other thoughts. He must for a time forget his personality, and turn from thoughts of his own plays and work and all that directly interests him outside the lesson. He must get out of his own current of thought and into that of his teacher.

Active attention stands opposed to that rambling state

of mind in which the thoughts move continually from one topic to another without dwelling upon any; and also to that apathetic and listless condition of the mind in which it is not conscious of thought; or in which ideas, if they exist, leave no trace in the memory. It is the kind of attention which a teacher must have from his pupils if he wishes to impress them. The teacher should ever remember that the minds of his scholars may be a thousand miles away, whilst their bodies may occupy positions of reverent attention.

Chapter IX.

KINDS OF ATTENTION.

IN accordance with the motive which induces it, attention is either INSTINCTIVE or CONTROLLED; according to the way in which it is exercised, it is either COMPREHENSIVE or DISCRIMINATIVE, and according to the attitude of the mind it is either RECEPITIVE, INVESTIGATIVE, or EXECUTIVE. With regard to the subjects investigated attention is either EXTERNAL or INTERNAL.

1. Instinctive Attention is the concentration of the powers of the mind on an object or a study because of its inherent attractiveness. We attend to many things without conscious effort, and may even do so in opposition to our wishes. Those things which give us either pleasure or pain demand and receive our attention in proportion to the intensity of the interest they have for us. The little child gives attention because it is a delight to do so. It attends to one thing until another becomes more attractive. “Observation, attention, concentration, last so long as enjoyment lasts and no longer.” The mind of the little one flies like the bee from flower to flower, and it gets something every time it alights. The child does not pass from object to object for the sake of information, however, but on account of the beauty and attractiveness of the objects.

themselves. Nevertheless it gathers the knowledge more easily and more rapidly than it ever does afterwards, even when the acquisition of knowledge is its direct object. The child learns more between the ages of two and a half and four years than it does during any five years afterwards. He has learned a language, and speaks it correctly both as regards grammar and pronunciation, if he has listened to good speaking. He is intimately acquainted with the worlds of nature and of art so far as he has come in contact with them. He knows the relations of things to each other and to himself. He cannot explain, but he puts in practice, many of the principles of philosophy. He is even capable, to a far greater extent than he usually gets credit for, of estimating and appreciating the motives as well as the actions of the adults by whom he is surrounded.

He could not have learned thus rapidly, if it had not been for the power of instinctive attention, the intensity of which in a child is so great as to require but a short time to gather ideas. Teachers will do well to note carefully, not only the marvellous rapidity with which knowledge is acquired in early years, but the distinctness and permanency of ideas received in the days of childhood. Many parents and teachers complain of the flightiness of children, and their lack of continuity in giving fixed attention to a subject. If they would only reflect, they would find that this tendency to pay attention to whatever gives the highest degree of joy or pain is a characteristic of childhood impressed by our Creator. The results already noted clearly prove that it is not necessary to give long-continued, so much as undi-

vided and oft-repeated attention to a subject in order to become acquainted with it. The clearness and permanency of ideas depends on the interest and intensity of attention rather than its continuance. If the best teachers could only succeed in making children learn one half as rapidly during school-days as they did in their homes or in the fields and woods before school life began, they would have great reason to congratulate themselves.

Why do children not continue to manifest the same degree of interested or instinctive attention through life, that they showed in early years? Is the change due to an altered mental nature, or is it caused by improper methods of teaching? It is partly due to both causes, but mainly to the latter. Professor Payne says: "It is certain that there are processes of so-called education in vogue amongst us which, by the assiduous cultivation of mere rote memory, convert teaching into a mechanical grind of words, and thus defeat the very aim of true education, which is to store the mind with ideas, and only to recognize words as far as they minister to this end. The lamentable results of such methods, which make much provision for feeding and none for digestion, is to ruin irreparably the appetite for knowledge—the knowledge which consists in ideas, not words. Hence it is that we see children, who in their earliest years were distinguished for mental ability transformed into dunces at school—a consequence obviously due to what is miscalled their education; for the number of children really stupid by nature is probably not at all greater than that of those born blind, or deaf and dumb."

There is one fundamental difference between the natural method and the school method of teaching, which is worthy of careful thought by teachers. Before school the learning has not been the direct object aimed at. It has been incidental. The child was attracted by something, and he watched it, or handled it, or used it, in order to add to his happiness. He was not attending to lessons merely, but he learned them thoroughly, as the result of his doing. School work cannot all be done on this principle, but it should be done so as far as possible. There will be enough "drudgery" under the most favorable circumstances to serve for mental discipline.

Froebel in his Kindergarten system has sought to utilize the instinctive attention of children to the fullest extent. He recognizes the immense rapidity and value of the development of even the infant mind, and sets to work with the idea of systematizing the child's work without in any sense curtailing his enjoyment. He consequently brings him in contact with a carefully graded series of objects and occupations which are most attractive to him, and at the same time are admirably suited to the growth of his observant and reflective powers. He also allows him to have ample opportunity for unrestrained but directed play. There are some who, having merely glanced theoretically or practically at the surface of Kindergarten work, express the opinion that it is "only play." It is scarcely honest to give oracular decisions with such a small amount of investigation. There would not be much gold in the Kindergarten system, if a casual and unprofessional observer could find

it all in a few minutes. The truth is that the *Kinder-garten* system, by extending the period of instinctive, involuntary attention, has done a great deal towards the bridging over of the great gulf between the home and the school. What is needed in addition is the strengthening and completion of the bridge at its school end. In some subjects the principles underlying the *Kinder-garten* system should be carried out during the entire public school course.

2. Controlled Attention is the attention given as the result of a conscious effort of the will. The teacher may secure this conscious direction of the mental powers to a subject in two ways: by showing the pupils the advantages of study and thus convincing their judgment, or by coercive measures. The latter is of course the weaker plan in every respect, but if a pupil will not study from any other motive, compulsion should be used. The will of the child grows at first by submission to a superior will. Bain says: "The beginnings of knowledge are in activity or in pleasure, but the culminating point is in the power of attending to things in themselves indifferent." It must not be forgotten that while instinctive or attracted attention is the most effective kind in gaining knowledge, controlled or directed attention is of much greater importance as a mental discipline. The study even of an important subject may become a source of mental weakness, if we study only that of which we are naturally fond. He who studies history or science merely because he delights to do so gets much more knowledge but little more true discipline.

than he gets who reads novels because he delights in novel reading. Our best growth results from training ourselves to do, up to our best standard of power, the things we are not predisposed to like.

All studies cannot be made so attractive that students will prosecute them with ardor on account of the delight they afford. Different minds are fond of studying different subjects. As children grow older, therefore, they should be introduced gradually to those subjects which are less attractive. The mistake that is too often made in both public and Sunday schools is to expect young children to attend naturally to the teaching of subjects to which they are indifferent. To do this requires the exercise of a will power which they do not possess. Dr. Carpenter expresses himself very clearly on this point. He says: "Those strong-minded teachers who object to these modes of 'making things pleasant' as an unworthy and undesirable 'weakness' are ignorant that in this stage of the child-mind the will, that is, the power of self-control, is weak, and that the primary object of education is to encourage and strengthen, not to repress, that power. . . To punish a child for the want of obedience which it has not the power to render, is to inflict an injury which may almost be said to be irreparable."

It will not do, on the other hand, to allow the child to grow up with the idea that none of the problems of life are in themselves uninviting. The teacher should fit his pupils for grappling with and mastering difficulties, even in what is distasteful. One of the most important of all the mental powers is the will; and it must be

called into action in fixing the attention to these subjects that cannot be made attractive. "God has given us the power or capacity to direct the mind to any given object—that is, of directing, controlling, and in any way using the several mental faculties of which we are possessed: just as we have a like power over the various members of the body." Let this power be developed, but let the teacher carefully avoid depending upon compulsory attention as a substitute for good teaching.

3. Comprehensive and Discriminative Attention.—The distinction between comprehensive and discriminative attention is an important one for teachers to make. Comprehensive, distributed, or inclusive attention looks at a complete whole; discriminative, or individual, or concentrated attention examines a single unit. We may look at a whole landscape without distinguishing its particular parts so as to note the peculiarities of each tree, or hill, or house in it. We may look at a tree as a whole, without perceiving the special shape of each individual leaf, or even of a single leaf. We may look at a building without being conscious of its details in construction or ornamentation. We may inspect a shop window without seeing the fibre, or the pattern, or the lettering, or the price of the separate articles displayed in it.

On the other hand we may look at a single tree or hill or house without seeing anything else in the landscape; we may note the shape of a single leaf without thinking about the tree to which it belongs; we may count the windows or critically inspect the details of the

ornamentation of a house; or we may examine one by one the articles of a shop window in regard to shade, fibre, pattern, price, etc.

The power of distinguishing between these two kinds of attention should be defined in the minds of pupils, and the conscious ability to give either kind at will should be well developed. It is clearly a defect in our educational systems that they have failed to provide for the definite training of the power to give comprehensive attention so as to get in an instant a clear conception of the independent existence and the relationship of a considerable number of things. Such power may be developed and defined to a surprising degree, and when developed it has a great influence in qualifying a man for the higher enjoyment of the world of nature and art, and for a clearer realization of the problems by which he is surrounded in any department of life-work.

Some writers claim that it is impossible to attend to more than one thing at a time. Sir William Hamilton says: "So far from consciousness not being competent to the cognizance of two things at once, it is only possible under that cognizance as a condition. For without discrimination there could be no consciousness; and discrimination necessarily supposes two terms to be discriminated." There can be no doubt about the power of seeing more than one thing at the same instant. One can look down a street and distinguish a number of houses at the same moment. One can easily see a dozen knobs on the front of a chest of drawers, and be conscious of the fact that there are a dozen of them. The experienced man counts coins by fives or sixes, grouping them ac-

curately with his eye. Of course it is quite true that the more objects we bring within the range of our attention at a time the more indefinite our attention to each one.

Teachers need a special training in the power of giving comprehensive attention, in order to be able to see every individual in their classes at the same instant. The watchful teacher is not the one who nervously sweeps his eye around the room, but he who calmly opens his eyes and has his mind so trained that it can and does look at every pupil at once. In doing so a teacher cannot distinguish the features of his pupils as individuals, but he can note the slightest movement of the hand or the head, and when such a motion indicates that anything is wrong he should convert his comprehensive or distributed attention into concentrated attention. A teacher who can do this will have little trouble in maintaining order.

4. Receptive, Investigative, and Executive Attention.—The pupil's mind is aroused to receptive attention when he is receiving knowledge communicated by the teacher.

When a pupil examines or searches independently in order to gain knowledge, his attention is investigative.

When a pupil is doing something that he understands how to do, his attention is executive.

Receptive attention is the least intense and therefore the least productive kind of attention, because receptivity is the most passive condition of the mind in learning.

Investigative attention requires positive effort on the

part of the pupil. A student may investigate objects to make discoveries for himself, or he may examine books to learn the discoveries made by other men. The joy of discovery is greater than the pleasure of gathering knowledge. We are most interested in what gives us most happiness. The extent of our interest decides the character of our attention. Therefore, it is easier to arouse attention to the investigation of objects, than to the study of books. It does not follow, because children are more interested in things than in books, that therefore they should not be trained to study books. The power to search for and find knowledge, as stored in books, may be trained. It increases as it is used. From the earliest period of the child's experience in reading, he should receive systematic training in "digging for thought" in written or printed matter. The process of learning to read may be divided into four parts :

1. Convincing the child that the language he has been accustomed to use may be represented in visible form.
2. Training in word-recognition.
3. Extracting thought from written or printed matter.
4. Expressing thought clearly in oral reading.

The third stage, although vastly more important than any of the others, generally receive very little attention. The most humiliating charge that can be truthfully made against the intellectual training of schools, is that men and women do not definitely search for truth after they leave school. It is scarcely reasonable to expect them to be interested in the mines of knowledge, when they

have never been taught how to dig in them. A wise teacher regularly arouses the curiosity of his pupils in regard to questions of practical, commercial, historical, or scientific importance in order to lead them to search the books at their disposal for satisfactory answers and explanations. We are too much disposed to over-estimate the importance of investigations in regard to things, and to undervalue the power of independent study of books.

Executive attention is the most definite and the most developing kind of attention. The mind may be stimulated to activity either in regard to external things, or in dealing with the conceptions already formed. However we may be occupied in using knowledge, our attention may then be more fully engrossed than at any other time. The most complete concentration of attention possible is secured when giving executive attention under the stimulus of competition of some kind.

5. External and Internal Attention.—We may attend to things or their parts, to the world around us, its sights, sounds, etc.; or we may attend to the ideas already in the mind. We may attend to perceptions or to conceptions. The wise teacher makes his pupils gain his conceptions in the only way they can be formed definitely, by independent self-examination of external objects; but many teachers cripple their pupils mentally by confining their intellectual operations to external things after definite conceptions have been formed in their minds. The child should learn that 7 and 5 make 12 by using actual things, slats, pegs, beans, etc., but

he should not use these aids to his mind a moment longer than is necessary to give him a clear conception of the fact to be learned. He should neet deal with the figures 7 and 5, the representations of the slats, or pegs, or beans he used, and as soon as possible he should perform the operation mentally. Far too much arithmetic is done on slate or paper. Objects are invaluable in giving clear conceptions, but they are dead weights that prevent the mind from working, when it begins to apply these conceptions.

Chapter III.

CHARACTERISTICS OF GOOD ATTENTION.

1. Attention in Study should be Undivided.—It is possible to give attention to two things at once, but the attention given to one of them is taken from the other, and so indefinite conceptions are received of both. It is one of the highest duties which a teacher owes to his pupils to train them to be able to fix their undivided attention on one subject. The extent to which a man can rivet his attention, and control the working of his own mind, decides the standard of his intellectual power. The force of a stream becomes resistless as its channel becomes restricted. The genial rays of the sun when brought to a focus have intense burning power. The mind which admits various subjects at the same time, and as a result becomes confused and full of but indistinct ideas, might, if all its energies were directed to the investigation of only one subject, mount with majestic tread from height to height in original investigation. Napoleon said : “I am able to despatch a marvellous amount of work, because with all the powers of my mind I attend to one thing at a time.” “My golden rule,” said Dickens, “has been to devote myself completely to whatever I tried to do.” Locke says: “It should therefore be the skill and art of the teacher to clear the heads

of children of all other thoughts while they are learning anything, the better to make room for what he would instil into them, that it may be received with attention and application, without which it leaves no impression."

It is a difficult matter, however, even for adults to concentrate their attention on the one subject in hand. How often the thoughts which we hear expressed, or which we read, make no deeper impressions on our minds than the "shadows of the passing clouds do upon a landscape." A teacher should be patient when he finds some active-brained boy or girl is in "wonderland," when he is supposed to be revelling in the delights of complex fractions. It is often injurious to a very young child to startle it from its reveries. Mental links may thus be broken which will never be reunited. This remark should, however, be noted by parents and teachers of individuals, rather than by teachers of classes.

2. Attention should be Intense.—The permanency of impressions made upon the mind by the teacher or by circumstances depends upon the intensity of the attention given. Some events have burned their impress upon the tablets of our memory, so that they can never be forgotten. It matters not whether the circumstances have caused intense joy or pain,—if the sensations they caused have been acute, their remembrance remains vivid. There are few who would not forget some things, if they could. Alice Cary in her beautiful poem, "An Order for a Picture," touches a common chord when she makes the full-grown man appeal to the

painter pleadingly to paint his mother's face without the look of "reproachful woe" he saw in it when he told her the first untruth :

"But O, that look of reproachful woe!
High as the heavens your name I'll shout,
If you paint me the picture and leave that out."

Why is it that we cannot forget some things ? Simply because they interested us so much. We admire the beautiful flowers which bloom around our pathway as we ramble in the woods or garden in the early summer-time. We perchance may gather bouquets of those we deem most exquisitely beautiful. A month afterwards we may not remember the varieties we collected or the precise localities in the woods or garden from which we plucked them. Let a companion who has roused in us a strong, deep feeling, either of love or respect, pick and present one blossom to us, and we remember exactly its hues and shape, as well as the very spot on which the presentation took place. How clearly we remember the impressions of our first day at school ! How our whole mental nature was aroused to note the peculiarities of our strange position, and the novelties of our surroundings ! Our memories were deeply marked because our attention was so intense. If a member of our family ever met with a painful accident or was suddenly exposed to great danger in our presence, how vividly we recall the circumstances. There are two ways of fixing facts in the mind so definitely that they can be recalled with precision. One is by repeating a feeble impression until it becomes strong and clear. The other is by giving such intense attention as will at once make deep and

lasting impressions. Instinctive or attracted attention is naturally more intense than controlled or voluntary attention, and therefore so far as learning, not discipline of the mind, is concerned, instinctive attention is the kind that should be aroused.

Teachers should strive to secure a large degree of intensity of attention on the part of their pupils. This may not be possible in every part of every lesson, but there should at least be some part of every lesson which will arrest the involuntary attention of every pupil. If only one flower be clearly pictured in the memory, that one serves to recall the ramble and its pleasures. If some salient or culminating point in a lesson be illustrated, or presented in an impressive or even startling manner so as to fix the attention on it, it will form a magnet around which the other facts taught will group themselves. Bain says: "Intensity of sensation whether pleasing or not is a power."

3. Attention should be Investigating.—The mental attitude should not be passive but active. The mind should be vigorously and consciously aggressive in its search for truth. Knowledge should be sought after, not merely taken as it comes to us or is forced upon us. We should study because of a craving for more clear conceptions of truth and new revelations of it. We all have a desire for knowledge naturally. Proper education should make this desire grow stronger throughout our whole lives.

4. Attention should be Sustained.—Startling a class to make them attend is not a wise course. Some teachers

try an explosive method of securing attention. They first helplessly allow the class to drift into a state of disorder and confusion, and then, suddenly, comes a thunderclap ; they strike the desk violently with a ruler, or stamp heavily on the floor. Attention may be gained in such a way, but such attention will be given to the teacher himself or to the noise he makes, and will even then be only of a temporary kind. The noise of the pupils yields for a time, but very soon it re-asserts itself. Attention to be valuable must be steady. Sir Isaac Newton said: " Because I have acquired the power of intense and prolonged attention, I am able to accomplish what others fail to do." The receptive condition is increased ten-fold by the power to give undivided, intense, investigating attention to one subject for a considerable time. If attention is not continued beyond the fatigue point, the mind increases in its sympathetic receptivity to a subject the longer that subject retains undisputed sway in the mind. The reflective power, the productive condition of the mind is quickened and strengthened even more than the receptive condition, by sustained attention to one subject of thought. The man who can really exclude all but one subject from his mind for an hour, will be astounded at the increasing volume of thought that comes to him regarding the subject of meditation, if his body and mind are in a healthy condition. Teachers should, of course, never forget that giving intense attention is an exhaustive exercise, and that relaxation in some form—music, free gymnastics, or both combined—should be given to pupils at frequent intervals.

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Chapter XIV.

CONDITIONS OF ATTENTION.

1. Physical Requisites.—1. The room must be well lighted. Children cannot be bright and happy in a room that is insufficiently or badly lighted. The light should never come from the front or the right of pupils. It is best when admitted only from the left, but a left and rear light is admissible. All windows should reach well up towards the ceiling, and they should not extend too low down. It is better to have all the light admitted above the level of the eye.

2. The room must be properly ventilated. Unless it is so, the health of the children is injuriously affected, and their spirits are depressed, and it becomes impossible to give either intense or sustained attention to a subject. A congregation speedily becomes drowsy in a poorly ventilated church, and children gradually becomes lethargic in a badly ventilated school-room.

3. The temperature must be regulated. Pupils cannot be quiet and studious when their toes and fingers are cold. They become tired and indolent if the temperature rises too high. Cold feet and hot heads at the same time are bad for the health in many respects. The normal temperature is about 65 degrees.

4. The pupils must be seated comfortably. The essentials for comfort are:

- a. The seats must not be too high.
- b. The backs should fit the pupils' spinal curvature.
- c. The seats and desks should relatively correspond in height.
- d. The seats should be as close as possible to the desk, so that the backs of the pupils may be supported while they are at work.

A child's feet should rest on the floor, so that no part of the weight of the leg is borne by the thigh-bone. Many seats have the backs too high, others are too low. Either arrangement causes suffering to the children who sit on such seats.

5. Children should be allowed to change their posture frequently. The body tires sooner than the mind. Even if supplied with comfortable seats, remaining in one position too long causes injury to the body, and compels the withdrawal of the mind from the lesson, to note the necessities of physical comfort.

If the teacher notices his pupils unusually restless and inattentive, he should allow them to spend a short time in some simple physical exercises. Even standing up and sitting down will aid in removing listlessness and the inattention resulting from nervous restlessness. Exercises should always, if possible, be performed in time with music. They then form the most powerful and, what is of more importance, the most natural external disciplinary agent a teacher can employ.

2. Good Classification. — Proper classification ^{of material} promotes attention in two ways. Unless the pupils in a class are graded according to their attainments, the subjects and methods adapted to the advancement and capabilities of

one portion will be quite unsuited to the other. It is comparatively useless to try to steer a middle course. The more advanced will not give good attention because they think they are acquainted with the subject already, the more backward will usually fail to give close attention from sheer inability to keep up and clearly comprehend the teaching. Judicious grading also enables the teacher to secure a proper alternation of lessons on the programme of study, and to carry out the time-table without waste of time.

3. Good Order.—Order is an essential preliminary step in securing and retaining attention. Attention cannot be concentrated and intense, except under favorable circumstances. Disorder, unnecessary movement, bustle, confusion, and even faint whispering, distracts the attention. Those who talk must themselves be inattentive, and they prevent attention on the part of those to whom they speak. A recent American writer says: "Silence is the basis for the culture of internality or reflection—the soil in which thought grows. It allows the repose of the senses and the awakening of insight and reflection. In our schools this is carried further than merely negative silence, and the pupil is taught the difficult but essential habit of absorption in his proper task even when a lively recitation is going on with another class. He must acquire the strength of mind (of internality) which will enable him to pursue without distraction his train of thought and study, under any external conditions. Out of this discipline grow attention, memory, thought—the three factors of theoretic culture."

The teacher must carefully guard against the mistake of supposing that order and attention are equivalent. A class may be very orderly, and at the same time in a state of mental inactivity. Order and attention are quite distinct, but closely related to each other. Order is indispensable in securing attention ; attention is absolutely requisite in maintaining order.

4. Full Control.—While order should be maintained by giving the pupils plenty of work to engage their attention, it frequently becomes necessary to secure it by direct controlling power. To influence his pupils properly a teacher must first learn to control them. In teaching them to apply themselves to the study of subjects "indifferent," or uninteresting, in forming habits of attention for benefit rather than pleasure, and in developing the will power of pupils, the teacher's mind must assume not only a guiding but a governing function. It is of course true that the minds of the pupils may influence that of the teacher, but the extent to which this is true depends almost entirely on the teacher himself. Four things settle the question of mental control between the teacher and the taught:

1. The natural strength of a teacher's mind.
2. His force of character.
3. The interest he takes in his work.
4. The clearness of his conception of the subjects he desires to teach.

The weak, careless, indolent teacher, who has not thoroughly prepared the special lesson he has to teach, will not be a controlling power to a very large extent.

Chapter V.

ESSENTIAL CHARACTERISTICS OF THE TEACHER IN SECURING AND RETAINING ATTENTION.

1. Cheerfulness.—Unless the teacher be cheerful and kind in manner he cannot secure the sympathy of his pupils thoroughly, and without sympathy he cannot obtain proper attention. The pupils insensibly associate the teacher with the subjects taught, and unless attracted by the former they are not likely to be interested in the latter.

We like cheerfulness in others and they like it in us. A teacher with a second-class certificate, who has good health and a sunny disposition, will do much grander work for her pupils mentally and morally than a teacher with a first-class certificate, who has exhausted her nervous system and injured her digestion by overworking, in order to win her certificate. Irritability in the teacher naturally causes dislike for school and study on the part of the pupils. The teacher must be attractive. Sunshine promotes growth, character sunshine develops sympathy and consequent attention.

2. Earnestness.—The teacher's manner will influence his pupils for good more than his precepts or advice. They may laugh at his logic, they cannot resist his

personal power. If a man is not in earnest his pupils will not be zealous. He justifies inattention, if he does not speak and act in such a way as to show that he regards his teaching to be of great importance.

3. Enthusiasm.—Enthusiasm is well-directed energy, not mere excitement or assumed animation. Enthusiasm must spring from a genuine, fervent desire for the accomplishment of a well-understood purpose. Enthusiasm in teaching must grow from a love for the work, a thorough acquaintance with the subjects to be taught, and a deep conviction of the great value of education in forming the characters and securing the success of his pupils. Some one says, "Enthusiastic men are narrow." Perhaps they are to a certain extent, but narrowing a man's energies to his legitimate work is the most essential foundation for his success. The teacher should widen his mental range, and concentrate his energies and his emotional nature. "Enthusiasm is not a reckless zeal without knowledge; neither is it that overplus of feeling or action that overdoes the work, but undoes the worker. But it does consist in the combination of a high appreciation of the importance of your work, and a hearty zeal in the accomplishment of that work. Fanaticism is zeal without knowledge; indifference is no zeal whatever; enthusiasm is a zeal tempered by prudence, modified by knowledge. Indifference chills; enthusiasm warms and quickens. A teacher without enthusiasm has no right to be a teacher. He cannot be one in the truest and broadest sense without it." Enthusiasm is contagious. When a

teacher's attention to a subject is so complete that he becomes enthusiastic, his enthusiasm reproduces its first cause by arresting and fixing the attention of the class.

4. Quietness.—Some teachers act as though noise and bustle were equivalent to energy and enthusiasm. The mighty Corliss engine in Machinery Hall, at the Centennial Exhibition at Philadelphia in 1876, made less noise than almost any of the hundreds of machines which it set in motion. So in the schoolroom, the teacher should be the great motive power, mighty without being noisy, which sets the human machines around him to work for themselves. “Noise and emptiness often travel together.” Noisy teachers make noisy pupils. Some teachers are so noisy and demonstrative that they attract attention to themselves and not to the subjects they are teaching. If teachers speak in a loud tone, and in a high key, their pupils cannot listen to them long. Inattention and consequent disorder always mark the classes taught by piping teachers.

5. Decision.—The teacher's every act, look, and tone should clearly indicate decision. He must wear the dignity of his superior position as though it fitted him well. He must understand himself and his subjects. There must be no assumption in his bearing. There is a magnetic force connected with a man who has definiteness of aim and deliberation in action. The power of such a man is irresistible in its influence over those with whom he comes in contact. This is true even when they are of his own age; it is true to a greater extent when

they are his juniors. It is necessary for a teacher to have this power in order to develop controlled attention.

6. Power to Control.—Control is a necessary element in securing attention. The most perfect control can secure only passive attention, but this is an essential condition of positive attention. The teacher should have no difficulty in convincing his class that some one person must be the controlling power in the school, and that his age, experience, and developed force of character eminently fit him for the position of unchallenged leader.

7. Will Power.—There is no longer any doubt about the possibility of a strong mind influencing a weaker mind, if the weaker is not consciously resistful. This fact in mental philosophy should make it clear that a strong, definite teacher should be able to secure an attentive attitude on the part of his pupils by the directing influence of his will on theirs. This is especially true of teachers whose pupils are in sympathy with them, and who are therefore responsive to the will which they recognize as superior to their own. A teacher should have force of character sufficient to lead him to determine to have the order and attention essential to study on the part of the class; and such a determination indicated in a calm, kindly, but positive way will always secure ready obedience and coöperation.

8. Power to arouse and maintain Interest.—The teacher must not be too wordy. Fluency often drowns thought. Pupils will not exercise their minds, if the teacher does

their thinking for them. The best way to make a subject interesting and attractive is to set the pupils to work at making discoveries concerning it. The wondrous caves and marvellous treasures of knowledge may be opened and pointed out by the teacher, but they should be investigated by the pupils themselves. The joy of victory in overcoming some new difficulty, in mastering a hard problem, or in making even a trifling discovery, is a delight that thrills the entire intellectual nature of a child, and it forms one of the strongest motives to induce increased attention. In some way, however, the interest must be kept up, and as far as possible the subjects taught should be made attractive in themselves, without reference to the benefits they confer. As has been explained already, the permanency of impressions depends upon the intensity of the attention given ; it is equally true that intensity of attention depends upon the interest taken in the subject itself.

9. Patience.—The petulant haste of the teacher does not influence the minds of children to greater concentration of effort. On the contrary, it excites a feverish and disturbed condition of mind that in most cases prevents concentration. The most profound philosopher could not think clearly, if some being, whom he feared as much as the child fears an angry teacher, were dancing, and gesticulating, and scolding, and perhaps shaking him as an impatient teacher sometimes does a pupil. The thunder method may arrest the wandering attention of a listless dreamer, but it is the weakest and most in-

jurious method of doing even this. In dealing with dull pupils the developed mind of the teacher will forget the difficulties a child has in dealing with conceptions that can yet be only indefinite and unclassified in its mind, and the more enthusiastic the teacher is the more difficult will it be for him to be patient. He does a gross wrong to the child, however, if he becomes irritable and distracts its attention by chiding it. The mind must be allowed to flow in one direction to do its best work. The channel should be narrowed to increase the power of the current. Impatient threatening by the teacher either stops the current of the mind altogether, or dissipates its attention, as a gale blows water into foam and spray.

Chapter VIII.

HOW TO CONTROL A CLASS.

IT is clear from what has already been said that gaining control is a totally different matter from securing attention. Attention includes control, however, and it is therefore necessary that a teacher should control his pupils as a basis for obtaining attention from them. This he may do as follows :

1. By Standing or Sitting so as to See his Whole Class.—If a pupil feels that his teacher's eye is constantly and quietly taking note of all that is going on in his class, he cannot fail to be conscious of its controlling power. Unless he is defiant or exceedingly thoughtless he will need little more than the teacher's untiring eye to restrain him. The only pupils who resist control by the eye are the rebels. They are always very few in number unless the teacher is outrageously unjust and arbitrary. In dealing with rebels the combined authority of teacher, parents, and trustees should be enforced in order to teach them one of the most important lessons they can ever learn : a due respect for law, and prompt submission to it. The eye can be cultivated and its range of vision greatly widened. Few teachers have the power to see and watch every pupil in a class

of fifty at the same instant, but every teacher may acquire the ability to do so. It is astonishing to what extent clearness of lateral vision may be developed, without rolling the eyes from side to side. The teacher must learn to give comprehensive, as distinguished from concentrative, or discriminative attention. An easy, nervous movement of the eyes, or a fixed stare, neutralizes the influence they might exert. The seeing should be done without any apparent effort, but it should be done, and done unerringly. Even when using the blackboard the teacher should avoid turning his back to his class. "The eye has a magic power. It wins, it fascinates, it guides, it rewards, it punishes, it controls. You must learn how to see every child all the time."

2. Inattention Must be Noticed and Checked in Time.

—It is an epidemic, which may be easily controlled in its incipient stage. The fire that sweeps away in a breath the proudest structures of a mighty city might have been quenched with a few drops of water. It is madness to allow a wave of disorder to roll on and on until it has engulfed a whole class, and then attempt to break its force by a counter-disorder of greater violence. "A stitch in time saves nine" is as true in school as in other places. The inattention of one pupil in a large class, if of such a negative character as not to distract the attention of others, sometimes may be allowed to pass unchecked. It may cost too much to secure the attention of such a pupil. The whole class may be diverted from the subject under consideration in doing so, and a positive evil substituted for a negative. The class should

not be sacrificed for the individual. He may be informed at the close of the lesson, or before passing to a new line of thought, that his negligence has been noticed. This will soon cure him, and it will at the same time impress the rest of the class with the idea that the teacher regards their attention as of such vital importance as to avoid allowing anything unnecessarily to interrupt it. They will learn the importance of giving attention from his actions and manner more clearly than from his words. But as soon as passive inattention develops into the first symptoms of disorder, action must be taken instantly. How should this action be taken? In the quietest possible manner, The cure of the affected portion should be made without injury to any other part. If the teacher's object is to startle the whole class and completely dissipate their attention from the subject in hand, he should scold the offender or strike the desk, or stamp on the floor, or snappishly demand "attention." If he wishes to gain the attention of the careless pupil without allowing any one else to know that he has been inattentive, he can usually do so in one of the following ways:

1. By briefly pausing in the lesson.
2. By a quiet movement of the hand or head.
3. By a significant glance.
4. By giving a question to the wandering one.

With a fair degree of tact the remedy may be applied without loss of time to any but the pupil immediately concerned.

It is very desirable that the class should be saved from interruptions by the teacher himself. The interruptions

referred to are the worst possible, for they not only cause loss of time and distraction of attention, but they lead the whole class to believe that inattention is a very common, and therefore not a very grave, offence.

3. By Calm, Fixed, Fearless, Determined, Patient
"Will Power."—Every teacher should exercise "will power" in relation to his class. It should never be exercised haughtily or tyrannically, but always kindly and naturally. Wilfulness and self-will are very different from "will power." "Will power" simply means the ability to proceed undeviatingly to a desired end, and bring others along with you. The following are the characteristics which "will power" should possess:

1. *It should be calm.* Obedience on any terms is better than disobedience, but willing obedience must be secured by the teacher if he wishes to benefit his pupils. If "will power" is exerted in a noisy or violent manner it is offensive; if it is of a fussy kind it excites ridicule. It must be calm if it would secure control, beneath the placid surface of which no rebellion lurks in ambush. The teacher in exercising his controlling functions represents the majesty of law. So long as he acts judiciously his decisions rest on absolute authority, There can be no need for haste or excitement in his application of disciplinary agencies of any kind. Authority is most majestic and awe-inspiring when it is exercised in a dignified way.

Consistent *

2. *It should be fixed.* Some teachers are intermittent in their exercise of "will power." They are fully charged with energy and force one day, but seem to

have lost connection with their character batteries on the next. Steady, even, regular, uniform control is the kind required. In the schoolroom and in the yard the teacher's influence should be supreme, whether he is present or absent. He must never be a tyrant, he should always be a governor.

3. *It should be fearless.* No one can control a pupil if he fears him or his parents. The teacher should carefully study his proper social and legal relationship to the pupils, their parents, and the school authorities. He should stand on a foundation of solid rock, and be ready for prompt action in cases of emergency. Promptness and deliberation should go hand in hand. Promptitude and haste or excitement are not synonymous. Hesitation and timidity on the part of a teacher often stir to life germs of rebellion which might otherwise have been left to die for lack of nutriment.

4. *It should be determined.* While a teacher should always pay due respect and attention to the advice of friends, he should never allow either the counsel of his friends or the opposition of foes to make him deviate from the course which he knows to be the right and just one. Many men fail because when a wave of opposition meets them they feebly yield to its power and aimlessly drift with it; when if they had met it bravely and remained firm it would soon have passed them and left them better for its washing. The teacher may yield many times with profit to his school and to himself if he does it gracefully, but he can never do so when the question of control is at stake. He must then assert his "will power" in a most determined manner, without making himself offensive or being tyrannical.

5. *It must be patient.* This is the greatest requisite. The quality of "will power" is of great importance, the quantity of it at a teacher's disposal is of far more consequence. It must wear well. There is a dignity and a majesty in the patient assertion of the right and ability to control, which never fails to command respect. It is well, when taking charge of a new class, not to punish for slight offences at first. The standard of the teacher should be the correct one from the start; but if the pupils earnestly try to do what the teacher wishes, he should overlook slight offences until good conduct has become a habit.

Control asserts itself chiefly through the lip, the tongue, and the eye. They should be used in the inverse order to that in which they are named. The eye should be the exclusive medium of control, so far as possible; the tongue may be called to its aid in cases of emergency; the lip should be used very sparingly. The lip expresses firmness, combined with scorn or contempt, and these are sure to stir up active antagonism, rather than submission. A pupil may be, and sometimes should be, forced to yield without willing submission. Acquiescent obedience is most developing to the pupil and most pleasant to the teacher. In securing this compliance with the teacher's will the eye is the most powerful agent. The eye alone can convey a message of power and conciliation at the same time, and these are the elements of genuine control.

However good a teacher's control may be, he must not think that he has secured the attention of his class merely on that account.

Chapter VIII.

METHODS OF PRESERVING AND STIMULATING THE DESIRE FOR KNOWLEDGE

SOME one calls a child an "interrogative machine." Truly the appetite for knowledge with which nature endows him is a keen one, and difficult to satisfy. Some writers maintain that it is the duty of the school to set the child going mentally, that he may be self-educative when he leaves school. If pupils left school in as self-educative a condition as they enter it, there would be less ground for complaint than at present. The boy begins to "go" when very young, and for a few years he continues to develop at a very rapid rate. Very few children are dull when very young. Most children make remarkable progress until they go to school. Then too often comes a period of stagnation from which many never emerge. Improper methods are too often the cause of the discouraging change. The following are points deserving consideration by teachers of primary classes.

1. **The Transition from the Home to the School should be More Natural.**—The child on entering an ordinary school, passes from comparative freedom to confinement and restraint; from bounding activity to wearisome *transition*

quiet; from actual things to uninteresting abstractions; from living flowers, and birds, and pets, to mere black marks called letters, in which for themselves he can have no active interest; from play to work; from instinctive to compulsory attention; from fresh air and sunshine to bad ventilation and imperfect and often injurious lighting ; from the mossy bank to the hard and ill-formed seat.

Where the kindergarten can be introduced it serves to make the steps gradual in the change from the home to the school. The school should learn many lessons yet from the home and the kindergarten. Teachers must study the child more before he enters school, and they should continue in school more closely the methods of self-education practised by him, while he was at liberty to follow nature's guidance.

2. Knowledge should be Used as it is Acquired.—Children delight in coming in contact with things which they can use. They are interested in what things do. This shows itself very early in life. The baby, learning to talk, names the domestic animals according to the sounds they make. He calls the dog "bow-wow," and the cat "meow." This is true whether the name of the animal is more or less difficult to say than the sound made. While they have been making such rapid strides in learning and mental development at home, they were doing so by handling the things around them, and by using their knowledge as quickly as they gained it. What a change comes when they go to school ! Many even of the thoughtful class of teachers deliberately re-

verse this plan. They reason somewhat in this manner: "These children cannot do much actual work yet, and so we may as well save time by making them do the drudgery of school work now." They are therefore set to learn all the letters before they begin to read, all the tables before they put them to any practical use, etc. It is probable that the letters and the multiplication table have done more to stupefy boys and girls than any other causes. Girls and boys can work, and by working they not only learn how to work better, but become familiar with the elements of work they may be using. Even if the worst of all methods of teaching the names of words, the alphabetic, be used, no letters should be taught at first but those used on the first page or tablet of reading in the primer. The child should use the multiplication table, for instance, as he learns it, and he will thus pleasantly learn it as he uses it. Using and learning go hand in hand. Practical application is the highest and most effective style of review. A pupil will learn the "Two" line as far as "twice 4" in four minutes, but it will probably forget it in an hour, unless it is allowed to apply the knowledge it has gained. Why not teach it the process of multiplying at once in five minutes more, and then set it at work? "Oh, the child should never multiply until it knows its multiplication table!" says some driller. Does the study of the multiplication table qualify a child for the comprehension of the multiplying process? Certainly not. Then again, the child who has been taught as far as "twice 4" does know the multiplication table, so far as he is required to put it in practice. His teacher can assign several examples with

no other multiplier but 2, and no figures in the multiplicand but 1, 2, 3, and 4. It will do him great good to work the very same examples over a second or third time. Next day advancement should be made in the table and much practice given on both lessons, and so on to the end. This method will not prove a source of horror to pupils, but will delight them because they use the information as they get it.

If an apprentice, on entering a machine shop, were compelled by the foreman to spend months in learning the names of the various machines and their different parts, their relations to each other, their uses, etc., would such a course fit him to take charge of even one of the machines? The probability is, that long before the expiration of the time specified his work of learning, at first fascinating to him, would become loathsome, and from loss of interest he would be to a large degree incapacitated for the highest degree of success in his work. He should, and in charge of a practical man in any department of work he does, begin with the simplest of all the tools or machines, and he learns how to use it by using it. Others are entrusted to his charge when he is ready for them. Teachers should also be reasonable in familiarizing their pupils with the tools they have to use. The letters, the tables, rules in grammar, and other subjects, are merely the tools with which the child should be taught to educate himself, and they should be given to him only as he is able to use them. In geometry, for instance, definitions, axioms, and postulates should be taught, as they are needed to enable the pupil to overcome a difficulty he has met in his

work. He will be interested in a definition when he has been made conscious of the thing to be defined, and when he realizes clearly the need of the definition by the use he has to make of it immediately.

3. The Work of School should afford Pleasure.—If the desire for knowledge is to be kept alive and vigorous, if it is to survive through the early years of school life, school work must be made attractive. Herbert Spencer says that, of all the educational changes taking place, “the most significant is the growing desire to make the acquirement of knowledge pleasurable rather than painful—a desire based on the more or less distinct perception, that at each age the intellectual action which a child likes is a healthful one for it; and conversely. There is a spreading opinion that the rise of an appetite for any kind of knowledge implies that the unfolding mind has become fit to assimilate it, and needs it for the purposes of growth; and that, on the other hand, the disgust felt towards any kind of knowledge is a sign either that it is prematurely presented, or that it is presented in an indigestible form. Hence the efforts to make early education amusing, and all education interesting. . . . As a final test by which to judge any plan of culture, should come the question—Does it create a pleasurable excitement in the pupils?” Locke says: “It is a contradiction to the natural state of childhood for them to fix their fleeting thoughts. Whether this be owing to the temper of their brains, or the quickness or instability of their animal spirits, over which the mind has not yet got a full command; this is visible, that it is

a pain to children to keep their thoughts steady to anything. A lasting attention is one of the hardest tasks can be imposed on them; and therefore he that requires their application should endeavor to make what he proposes as grateful and agreeable as possible. If they come not to their books with some kind of liking and relish, 'tis no wonder their thoughts should be perpetually shifting from what disgusts them; and seek better entertainment in more pleasing objects."

Discard any system of primary instruction, however time-honored or in accordance with theory it may be, unless it makes lessons attractive. With the older children the step from instinctive to controlled attention must be gradually taken.

It is very desirable that teachers should avoid any course of action which will tend to make learning distasteful. If men are to be self-educative when they leave school, they should have a love for knowledge; certainly they must not have an aversion to it. Lessons should never be assigned as a punishment. Pupils may be compelled to do after school, or at home, work which they neglected to do at the right time. This is not a punishment for the neglect, however, but the performance of a duty which ought to have been done before.

4. School Exercises should be Varied as much as Possible.—Of course, the programmes of studies should be fixed, and the time-table adhered to regularly. This much is necessary to secure systematic work, and to distribute the school time equitably among the different subjects. The plan of presenting a subject should be

changed, however. Some new element should be introduced each day. In teaching geography, for instance, maps may be used one day, blackboard and slates the next, and the sand-box the next; to-day the teacher may point to the places he wishes to have remembered and the pupils find their names, to-morrow he may give the names and they find their positions on their maps. The plan should be varied during a single recitation, to a certain extent. So long as variety does not dissipate the attention, there cannot be too much of it. Freshness stimulates mental activity, routine deadens it.

5. The Child's Curiosity should be kept Alive.—Some classes are always on the tiptoe of expectation. The teacher who can secure such a condition in his class is certain to have attentive scholars. Natural aptitude in the teacher has something to do in stimulating the curiosity of pupils. The power to sustain it, however, must be acquired. Pupils will not long seek to be fed with chaff. The teacher must be prepared to gratify the appetite which he aims to develop. He must be familiar with the subjects he has to teach; he should be well acquainted with all that relates to them in connection with current events. Hart aptly says: "To real, successful teaching, there must be two things, namely, the ability to hold the minds of the children, and the ability to pour into the minds thus presented sound and seasonable instruction. Lacking the latter ability, your pupil goes away with his vessel unfilled; lacking the former, you only pour water on the ground."

6. The Lessons given and the Subjects taught ought to be Adapted to the Advancement of the Pupils.—If lessons are too difficult a child will naturally turn from them, first in disappointment, afterwards with dislike. The subjects should be presented in a manner suited to the ages of the pupils taught. Some of the most interesting studies are rendered permanently obnoxious by improper methods of teaching them to children at first. For instance, in teaching a foreign language, or the grammar of our own language, difficult and uninteresting rules, with puzzling exceptions to the general rule, are memorized and recited, and the teacher (in addition to this outrage) actually deceives the unfortunate and long-suffering pupils by allowing them to believe that such wearisome drudgery is learning language or grammar. They, of course, in most cases, associate the unpleasant feelings they receive in school with study and learning in the abstract, and therefore get a distaste for knowledge itself. Let the methods and the subjects be appropriate for the ages of the pupils, and their love of learning will continue.

7. The Steps in Learning should Not be too Great.—If a desire for knowledge is to be maintained, the pupil must be able to see clearly how one portion of a subject is connected with another. The step to be taken should be based on those already established, and the teacher should remember that what appears but a mole-hill to him may be a mountain to his pupils. In learning to climb, the pupils must take the necessary steps themselves. The teacher presents the difficulties that they

may climb over them. He must not lift his pupils over any difficulties which they can surmount by their own efforts. Each effort made gives greater power to make a similar effort, as well as a greater tendency to make it. It is of the utmost importance, therefore, that the pupils should not be discouraged by being called upon to take steps too great for their mental strength. He is the best teacher who can most clearly remember his own early difficulties in learning.

8. Lessons must Not be too Long.—This is true, both as regards lessons at school and those assigned for home preparation. Long-continued lessons in school weary the mind; long lessons learned at home tire both mind and body. When learning becomes a “task” it necessarily ceases to be attractive in itself. It should not be surprising that under such circumstances children lose their natural eagerness for knowledge.

If the suggestions given be carried out in the right spirit, boys and girls will continue to be “interrogative machines” throughout their whole lives.

Chapter VIII.

HOW TO GRATIFY AND DEVELOP THE NATURAL DESIRE FOR MENTAL ACTIVITY.

ACTIVITY is one of the instincts of childhood. A child is not happy unless its mental or physical powers, or both, are engaged. Productive activity is the only corner-stone on which a truly philosophical system of education can be founded. Give a child work to do of a character suited to his age, let it call his mental faculties and manual abilities into play, and he will be attentive, not merely because he is occupied, but because his occupation gives him delight. Fellenberg says: "Experience has taught me that indolence in young persons is so directly opposite to their natural disposition to activity, that unless it is the consequence of bad education, it is almost invariably connected with some constitutional defect." Hailman says: "Perhaps attention and activity of the mind are convertible terms; for we observe that the mind is never attentive, unless it is aroused to action by some external cause (such as a wonderful object, an exciting scene, a thrilling narrative, a deep sorrow), or by an internal cause—the will." It is important, therefore, in order to secure attention, that every means be taken to awaken and satisfy the child's mental activity. To do this it will be found necessary to attend to the following:

1. Do as Little Telling as Possible when Teaching.—

Of course, the teacher should not try to teach everything by experiment, as he would waste time in doing so. The accumulated knowledge of the ages is a store from which the pupils ought to be allowed to draw largely without making all the necessary discoveries and progressive steps themselves. But whenever the teacher can lead his pupils in the development of a subject he should do so. He should not allow them to wander in search of the gold mines of knowledge, neither should he dig the gold and coin it for them. The word for "schoolmaster" in the Welsh language has a very suggestive meaning. The word for school is "Ysgol," which conveys the meaning at once of progression in learning being step by step, commencing at the lowest rung and going upwards. The name for schoolmaster is "Ysgolfeister," the full signification being "One that teaches to climb." The teacher should not merely climb himself and throw down to his pupils the treasures which he finds. He should teach each pupil to climb for himself, so that as he goes higher he may grow stronger. "This need for perpetual telling is the result of our stupidity, not the child's. We drag it away from the facts in which it is interested, and which it is actively assimilating for itself; we put before it facts far too complex for it to understand, and therefore distasteful to it; finding that it will not voluntarily acquire these facts, we thrust them into its mind by force of threats and punishments; by thus denying it the knowledge it craves, and cramming it with knowledge it cannot digest, we produce a morbid state of the faculties, and a consequent disgust for knowledge in general;

and when, as a result partly of the stolid indolence we have brought on, and partly of still continued unfitness in its studies, the child can understand nothing without explanation, and becomes a mere passive recipient of our instruction, we infer that education must necessarily be carried on thus. Having by our method induced helplessness, we straightway make the helplessness a reason for our method."* The pupils should be trained to become investigators, not accumulators merely.

2. Give the Pupils their Rightful Share in the Work of Study.—Too much dependence is placed in eye teaching by many teachers. Pupils may see a great deal, without receiving fixed impressions, however. Seeing does not require great intensity of attention. The teacher cannot always be certain that the looking child is thinking about the subject in hand. He may look at the teacher, or the blackboard, or an object, and yet be thinking about his last fishing experience.

A Sunday-school teacher was delighted with the apparent interest manifested by one of her pupils, who, contrary to his usual custom, kept his eyes riveted on her during the whole lesson. When the lesson was over he surprised her by saying: "Miss Jones, you didn't move your under-jaw once while you were talking." The teacher should have made him talk or write, or draw or make something as the lesson proceeded. Her mistake was in supposing that boys can listen long to even good talking. Listening attention is not of much conse-

* Intellectual Education.—*Herbert Spencer.*

quence at best. It is merely receptive, but it should be productive.

The inattention so lamentably noticeable in most Sunday schools, and many public schools, is due to the fact that pupils are mere recipients of information and not active participants in the process of learning. They are hearers, when they should be doers. Their desire for mental activity languishes and gradually dies from lack of exercise for their mental powers. They are only required to listen or look and remember. They become passive because the teacher gives them little opportunity to be anything else. They would lose some of their powers altogether if they went to school all the time.

3. Let Pupils Use their Hands as much as Possible while Learning.—The true sequence in gaining and fixing knowledge is, investigation, perception, conception, application. Our clearest perceptions are those received incidentally from things as we make or use them. No conception is ever perfectly definite until we have in some way applied it in activity. Memory should be stored by repetition of processes, not by repetition of words or statements. Drawing or collecting specimens of netted veined and parallel veined leaves will give clear perceptions and definite and permanent conceptions, infinitely better than any amount of repetition of the best possible definitions. The beginning and the ending of knowledge-gaining is in doing or experimenting. Knowledge should not be stored up for use, it should be stored by use. This will not only fix the knowledge better, but will train the power to use knowledge, a much

more important department of educational work than mere knowledge-gaining.

The use of the hands is the only certain way of compelling the pupils to attend to their work. No mind but his own can guide a pupil's hand. When he is making anything, he must, therefore, use his mental powers so far as is necessary in order to guide his hand. There is no other effort of his that can require so definite a concentration of his powers, and so complete an application of his knowledge, as the effort to give a visible representation of the conceptions he has in his mind. No other process forces him to make so close an introspection of his conceptions, or so clearly demonstrates to him the indefiniteness or inaccuracy of his mental pictures, or so permanently photographs them in his memory. The beginning and the end of knowledge-gaining is in using things, not in receiving lessons about them. No mother is foolish enough to give lessons to her children on spoons, knives, chairs, etc., etc., but a child of three years old knows the names and uses of every article in the house, and outside of it too, so far as it has used them. If every teacher could be a Newton and see this ~~apple fall~~, the most serious blundering in the teaching of the schools would soon be recognized and removed.

Reproducing knowledge independently is a process that can be applied in every school study by every pupil. It is the only sure way of insuring attention, stimulating mental activity, defining and fixing the conceptions, and revealing the nature of these conceptions to the teacher, so that he may correct them when inaccurate, and improve them when they are indefinite.

4. Do Not Weary the Minds of the Pupils.—A proper amount of physical exercise produces beneficial effects on the muscular system; beyond a certain point it is exhaustive. So a judicious amount of mental exercise strengthens and develops the mental powers, but study after the “fatigue point” has been reached has a debilitating effect. The moderate use of the physical powers gives pleasure, and increases the longing for exertion; so the judicious application of the mind awakens greater desire for study, and gives additional power to investigate the problems which may be presented for thought. One of the teachers most certain to fail is he who tries to make his pupils do mental work for sixty minutes in each hour.

5. Do Not Overload the Minds of the Pupils.—The carrying power of a child’s mind is frequently over-estimated by teachers. Many brilliant boys are made to carry such large loads of knowledge during their schooldays, that they become mentally paralyzed to a certain extent, and never recover their full vigor of thought. This partly accounts for the fact that so many clever schoolboys turn out to be only mediocre men. Over-eating causes dyspepsia and destroys the appetite for food. There are mental dyspeptics.

6. Let the Lessons and Teaching be Suitable to the Age and Development of the Child.—Medical men recognize, as a most important factor in the development of the body, the necessity for a proper supply of food of a nature suited to the needs and powers of the child, and

they clearly indicate certain kinds of food certain to be injurious to young children. Mental philosophers as clearly indicate that there are stages in mental growth in which the children should not be required to study certain subjects. There can be no doubt that children are usually taught to read at much too early an age. Children should be led by more natural steps from the condition of instinctive to that of controlled attention.

7. Be Sure that your Pupils receive Definite Ideas from your Teaching.—One of the teacher's greatest difficulties is to realize the weakness of his pupils in mental grasp, and their lack of extended and definite knowledge. He is the best teacher morally who has the heart of a child combined with the wisdom of a man. He is the best teacher mentally who can realize most clearly his own mental condition when a boy, both as regards power and knowledge. The ridiculous answers published in "English as she is taught," and similar collections, serve to show that we give children credit for knowing correctly many things about which they have widely distorted conceptions. The effects of using language not accurately comprehended by pupils are most disastrous in confusing and stupefying their minds, and in preventing the fulness of interest that is the greatest stimulant to mental activity. Children should be so trained that they will ask at once for the full meaning of any term not fully understood. A wise teacher or parent will always urge his children to pass over no word or sentence in his general reading without knowing its meaning. Reading should be done from papers, periodicals, or

books with a dictionary at hand, and thrice blessed is the child who has access to a cyclopædia in which it may find explanations of any references in its reading which it does not comprehend. The knowledge the child thus gains is valuable, and the training it receives is of much more importance. There must be no haziness surrounding the subjects of study so far as a child has advanced, if we expect him to continue to be interested in them sufficiently to arouse a sufficient amount of aggressive mental activity.

Pupils must be trained to express in outward form on their slates, orally and in other ways, the conceptions they have received, so that the teacher may be able to see clearly what is really in their minds. He will then be able to appreciate the weaknesses of their minds, and of his own teaching. The attempt to give expression to his thoughts in writing or by drawing will help to make clear to the pupil himself the defects in his own conceptions regarding a subject. It is one of the most important steps in learning to make the learner conscious of his need.

8. Have Matches in the Various School Subjects.—Who does not remember the enlivening effects of the spelling matches of his boyhood? So intensely was their attention concentrated upon the subject in hand, that grown men remember distinctly the very words missed by themselves and others in some remarkable contests. Such matches may just as well be conducted in reviewing the other school subjects as in spelling, and their effects in inspiriting classes will always be found to be very bene-

ficial. They should not be held at stated times, or conducted in a formal and indifferent manner by the teacher, or they will lose their interest.

9. Question while Teaching.—Some teachers ask questions only while reviewing. This is a serious mistake. To test knowledge is certainly one of the functions of questioning, but it is a subordinate one. Socratic, Instructive, Teaching, or Developing questioning is the most efficacious mode of teaching. It does not simply give information; it arouses the minds of pupils to activity, guides the active minds in the acquisition of knowledge, and sets the stored minds upon the plan of using the information obtained. It develops not only receptive, but productive activity. “He who gives knowledge to the human mind is a benefactor; but far greater is he who by giving knowledge quickens into activity and productiveness the mind upon which he works. The true teaching process involves the power of intellectual quickening, which is that process by which the teacher excites the intellectual powers of his pupils to self-activity in the line of his teaching; and to be really effective it must also lead to the courses of thought, feeling, purpose, and action which are the proper products of the truth taught.”

Teachers should talk and tell less, and draw out more. Questioning from the known to the unknown welds the links in the chain of knowledge as they are formed, so that when completed they are not merely isolated facts. It gives a pupil a conscious power to overcome difficul-

ties for himself. The following rules should be observed when questioning:

1. Do not ask questions in rotation.
2. Do not point to the pupil whom you wish to answer while asking a question.
3. Do not even look fixedly at the pupil whom you wish to answer, while giving the question.
4. State questions to the class as a whole; ask one member for the answer.
5. Do not wait an instant for the answer when reviewing most subjects.
6. Do not look steadily at the pupil who is answering.
7. Do not repeat a question to oblige those who were inattentive.
8. Be sure to ask questions to those who are in the slightest degree inattentive.
9. Ask most questions to timid or backward pupils.
10. Ask easy questions to dull and diffident pupils.
11. Try simultaneous answering to overcome nervousness and hesitancy in answering.
12. Occasionally ask elliptical, alternative or suggestive questions to develop the habit of answering.
13. Vary the method of questioning.
14. Never try to puzzle honest pupils.
15. Do not ridicule an answer if given in sincerity.
16. Do not prompt pupils who are answering.
17. Be brisk. Do not pause between an answer and the next question.

10. Let Pupils Question Each Other.—The contests which will awaken the highest degree of mental activity

on the part of pupils are those conducted by themselves. Confine them to the work actually taught and give them due notice, and such exercises will produce the most satisfactory results. It is a good plan in some subjects to prepare a series of questions for the pupils covering the work to be learned. These should not be given that the pupils may merely prepare answers to them, to be recited in a parrot-like manner. They should simply guide to the golden thoughts. This will train them to gain thought readily and definitely from books. Few people can read a new book and give the central truths it contains specifically and clearly when they get through. Lists of questions will lead to reading with a conscious aim.

11. Let the Pupils Ask Questions of the Teacher.—Pupils should always be encouraged to ask for explanations of the unsolved problems in their minds. The habit of indifference to the insights we gain regarding our lack of knowledge concerning important matters is a most destructive one in its effects on mental activity and growth. Our early instincts lead us to seek promptly for the solution of the problems that present themselves to our minds. It is an awful thing to lose this instinct, and school methods must be bad or weak if they fail to define the instinct into a conscious habit. Pupils are not interested deeply in a subject if they do not ask questions regarding it. Their attention should be aggressive, not merely passive. In order to develop the habit of questioning by the pupils it is a good plan to devote the first five minutes of a lesson regularly in some

subjects to questioning the teacher concerning the portion of the subject that has been assigned for home preparation. Pupils would soon learn to note the problems that would arise in their minds while studying, and for which they cannot themselves find answers. The habit of doing this is the only means of stimulating the tendency towards investigation and transforming the instinct of inquiry into a conscious search for truth.

12. Use Illustrations.—Illustrations appeal to the eye, or to the imagination. The following kinds appeal to the eye:

1. Blackboard illustration.
2. Picture, map, and chart illustration.
3. Model illustration.
4. Object illustration.
5. Illustration by experiments.
6. Dramatic illustration. *very class numbers*

1. *Blackboard Illustration* is of more use than any or perhaps all other kinds of illustration, except that actually done by the pupils themselves. Every teacher can use it; no teacher should try to teach without it. Its superiority over other methods of illustration consists chiefly in the fact that the work grows in the presence of the pupils. They see it made and help to make it, either by actually handling the crayon, or by making suggestions step by step as to what should be done next. The teacher who presents a finished illustration to his class weakens its effect by at least one half. It is nearly as bad to do the whole illustration, even in the presence of the pupils, without explanation to them, or assistance

from them at every step. Some teachers work the complete solution of a problem on the board, when illustrating a new rule in arithmetic or algebra, without speaking or even looking at the class until they have finished it. Then they turn round and give the explanation in the stereotyped question, "Do you see?" They would have interested their pupils a great deal more, and have educated them nearly as much, by tossing a copper for "heads or tails." The following rules should be practised in blackboard illustration:

- (1) Arrange the steps in the process of thought in logical order.
- (2) Number the various steps either by figures or letters.
- (3) The steps in the illustration should be taken as the process of thought is developed.
- (4) When illustrating distinctive characteristics, peculiarities of growth or construction, etc., in teaching botany, zoology, natural philosophy, etc., it is well to exaggerate the special parts to which attention should be directed.
- (5) In solving a problem, making a diagram, drawing a map, explaining the construction of a machine, illustrating botany or zoology, in fact in all kinds of blackboard work, every pupil ought to do on slate or paper what the teacher does on the board, and usually part by part after him. No other means of illustration can define and impress knowledge or train the observant powers so thoroughly as this.

2. *Picture map, and chart illustration* may be used in conjunction with blackboard illustration, both preced-

ing and following it, to give a correct idea of things as wholes, and to show in some cases the coloring, etc. They ought to be used, too, in testing the accuracy of the work done by the teacher and pupils. For instance, when a map has been sketched it should be compared in its leading outlines with the actual map to see whether the great features bear their proper relations to each other; whether Florida extends further south than California, etc. Every pupil should have his own map and make his own comparisons.

3. *Model illustration* is used by some teachers very successfully by cutting out the shapes of things or their parts from brown paper or some similar material. A good set of illustrations of mathematical forms may thus be made. Models of machines, of the parts of the human frame, etc., may be purchased, which will be of great use in teaching some subjects. Good teachers, however, usually try to make most of their own models.

4. *Object illustration* must not be confounded with object-lessons, as this expression is used in its technical sense. In an object-lesson an object is examined as something of interest in itself, in object illustration the object merely represents something else. In arithmetic, for instance, the object, slat, stick, shoe-peg, bean, button, or whatever else it may be, usually represents a unit. In all object illustration, the teacher should aim to have every pupil supplied with the necessary materials for performing the illustrations himself.

5. *Illustration by experiment* should as far as possible be conducted on the same principles as object illustration. It produces its highest results when every

student performs for himself the experiments described by the teacher. If this cannot be done, the pupils, unless the class be too large, should assist the teacher each taking some part in preparing for the experiment.

6. *Dramatic illustration* means representation by action. The living, energetic teacher uses this method of illustration very largely, and if appropriate it always aids greatly in communicating knowledge. It is of much use in giving ideas of shape, size, direction, motion, action of machines, etc. Any one who has ever seen a deaf mute address an audience by *signs*, must have realized to what an extent action may be even substituted for speech. A good teacher always uses his hands and arms to illustrate as well as emphasize what he says to his class.

In all kinds of illustration that appeal to the eye, it is well to keep the pictures, charts, maps, models, objects, apparatus, etc., out of sight as much as possible until the time arrives for using it. This stimulates the curiosity of the pupils and prevents the distraction of their attention. To show pictures at once, or to present the spectacle of a table covered with apparatus, is a capital method of gaining attention to the pictures or apparatus. It may make it all the more difficult, however, on this account to get the attention concentrated on the lesson itself.

Illustrations that Appeal to the Imagination.—All kinds of illustrations are aids to the imagination, but stories, incidents, personal experiences, descriptions of noble deeds, these appeal directly to the imagination,

and depend on the imagination alone for the conceptions they are to produce in the mind. These illustrations are of great use in making real our ideas of abstract thought. They define and strengthen the conceptions of right and wrong, by associating them with living, with acting, with practical realities. As illustrations that we examine with the eye serve to make clear abstractions of truth in regard to fact, so the illustrations in the form of stories make clear abstract truth relating to duty. As the object embodies the fact so they embody the duty. They present duty not as a theory but as a realization. They appeal not merely to feeling and thought, they stimulate to self-activity. They present duty to the complete sequence of mental and moral activity; feeling, thought, decision, action.

In the strengthening of his moral nature by stories, the pupil should be allowed to do his own share of the work. The pupil should discover the facts in an object-lesson, he should also discover the moral in the story. The teacher should not point it out. The "moral of the story" should not be defined unless it can be immediately practised.

Chapter XX.

DISTRACTING ATTENTION.

WHILE it is the teacher's duty to develop in each child the power of concentration under distracting conditions, it is not wise to multiply distractions in school. The child's power of giving attention is in the formative stage. It is certain that it can best learn to attend only to one thing, by attending closely only to one thing. Giving undivided attention should become a habit, before it is tested. Children cannot acquire this habit by attending or trying to attend to two or more things at the same time. They have not at first sufficiently developed will power to control their instinctive tendency to attend to everything that occurs in their presence. Few men ever reach the condition of being able to refrain from noticing even commonplace actions done within range of their vision. No lecturer can hold the attention of his audience when a man walks across the front of the hall to open or close a window. If it is difficult for men to avoid noticing distractions, it is much more difficult for boys to do so. While the habit of giving attention to one thing is being formed, distractions should be avoided so far as possible. The child's mind should get time to "set" in the mould of concentration, without interruption. Hence it is clearly the teacher's duty to prevent

distracting conditions, while his pupils are working. The following are among the dissipating causes that should be kept out of the schoolroom:

- 1. Noisy Teaching.**—Quietness is conducive to attention.
- 2. Over-demonstrative Teaching.**—This transfers the attention from the subject to the teacher.
- 3. Talking in too High a Key.**—This is distracting in two ways. Pupils who are being taught find it very hard to listen, and pupils at their seats find it difficult to work without being conscious of the unpleasant sound.
- 4. Scolding, or even Censuring, Pupils Publicly.**—This has a bad effect generally on the pupil reproved, and it is certain to distract the attention of every pupil, while perhaps only one was originally inattentive.
- 5. Stamping on the Floor, Striking the Desk, Ringing a Bell, or any Sudden means of Ordering "Silence," must Prevent the Entire School from Attending to Study.**—Our nervous systems become accustomed to continuous exciting causes, so as to be quite oblivious to them, but we can never get accustomed to explosions.
- 6. Punishing during the Study-hour.**—Human sympathy is always a motive sufficiently powerful to lead a whole class to watch with deep interest, if not strong feeling, the administering of punishment on a fellow-

pupil. The punishment may usually be given with advantage in the presence of the class, but not while the class should be working. Between lessons or at the close of the forenoon or afternoon is a suitable time.

7. Frequent Interruptions by Pupils Going Out, or Going for a Drink, etc.—Appeals to attention that come through the eye are much harder to resist than those that come through the ear. Sights distract more than sounds. Movements of pupils, therefore, are among the most certain causes that lead to inattention to the subject of study. We may become so accustomed to sounds, and even to fixed and unchanging sights, as to be quite unconscious of them while we are studying. We can never reach a condition of concentration so deep as to prevent the distraction of our attention by movements within the range of our vision. Pupils cannot study well near an open window overlooking a street, or a place where workmen are employed. Shading the eye so as to shut out the attractions that appeal to it often aids the student in concentrating his attention.

8. Whispering is a Prolific Source of Inattention.—The pupil who whispers is inattentive himself, and his whispering must distract the attention of the pupil to whom he speaks. There can be no defence of whispering. Honest pupils will not whisper when the evils that result from it have been explained to them, and dishonest pupils should not be allowed to do so.

Chapter X.

TRAINING THE POWER OF ATTENTION.

ONE of the most important intellectual powers the teacher can ever develop in his pupils is the power of giving close and persistent attention to one thing, either to an object of investigation or a subject of thought. He can best help to promote concentration by securing right conditions, and preventing distracting influences. Even grown-up men will find their minds wandering from a sermon if a baby speaks in a congregation, and every eye will turn from the preacher's face to follow the flight of a bird or a butterfly that has come in through the open church-window. It is much easier to distract a young mind than an old one. The young mind is volatile any way and disposed to wander. So far as possible, it should be trained to attend to one thing by having only one thing to which to give attention. Allurements to the young ears, and especially the young eyes, should be removed, that the young mind may be appealed to by but one thing at a time. The length of time such condensation of attention should continue will depend on the age of the child. At first it should be a very short period. The mind of a young child acts with great intensity, and by forcing it to continue to investigate an object or a subject after it has tired of it may train its mind to act

more slowly, with less intensity, and consequently with less definite and permanent conceptions as a result of his thinking. With proper focussing of the mind, its power is increased and its rate of investigation and reasoning greatly accelerated, so that long-continued study need not be essential.

In training the attention the teacher should practise the following rules:

1. ~~His~~ first duty is to secure proper external conditions, as pointed out in chapter iv.
2. He should next prevent distraction by external causes, as explained in chapter ix.
3. He should stimulate the natural desire for knowledge in his pupils, and gratify their desire for mental activity, in accordance with the principles laid down in chapters vii. and viii.
4. Instinctive attention should be gradually developed into controlled attention.
5. Volatile children should be asked to take a single object, and write down all they can discover concerning it in a specified time, say five or ten minutes according to the age of the child.
6. Slow children should be asked to take a momentary look at a picture or similar composite subject, and then describe as many persons or things as they have seen in it. It is a good plan to encourage them to walk past a shop-window and then name all the articles they can remember. Quickness of observation really means power to attend rapidly and definitely.

7. There is no school work that develops power of concentrating attention so fully as time tests in arith-

metic. These should be given for a few minutes every day. They should be given more than once a day, if pupils seem to be listless and have difficulty in fixing their attention aggressively on study. Time tests should be confined to work in the simple rules, which the pupils know perfectly well how to do. Arithmetical work involves two processes : the thought process and the work process. As we can never attend so fully to two things as to one of them, it is clear that the attention can be fully concentrated in working arithmetic only when the thought process is performed automatically. Hence time tests should involve no work that is not fully understood, and within the range of the pupils' power. The source of the attention-training power of time tests is the fact that a competitive efforts develops all the concentration of energy of which children are capable. In a time test pupils compete against time as well as with each other. Time tests may be assigned in two ways. The amount of work to be done (added, multiplied, etc.) may be given to be done in the shortest possible time ; or the time may be fixed and as much continuous multiplication as possible done in the specified time by taking the product in each case as the next multiplicand. The latter plan is much better for fixing the attention.

8. All competitive games either in the schoolroom or the yard aid in training the attention because they not only confine the mind to one thing at a time, but arouse it to intense effort, and apply the results of attention immediately in some definite way for the accomplishment of a specific purpose.

9. Mental arithmetic involving the work process only,

is an excellent means of developing the power of attention. Long examples such as $8 + 7 - 3 \times 4 \div 6 \times 3 + 4 \div 7 \times 9 \div 4 + 7 \times 4 + 8 \div 9$, etc., dictated by the teacher, compel at once the most absolute receptive and productive attention of the mind. If the rate of dictation be gradually increased by the teacher, a perfectly surprising rate of speed may be attained. Such examples given quickly are very much more useful in training the mind than mental arithmetic involving considerable thought in solution. Logical power is by no means the best result of arithmetical teaching. Executive power is much more useful.

10. It is a good plan to read long sentences and ask the pupils to write them out after hearing them read once.

11. A very interesting recreation for the class may be used with much profit to vary the monotony of school work and at the same time form the habit of attention, by reading a paragraph and requiring each pupil to write the number of words contained in the selection. The closest attention must be paid in order to count the words correctly.

12. Spelling words letter by letter, each pupil naming only one letter in turn as the word is being spelled, demands a complete concentration of the attention.

13. Reading a new story to a class, which they are required to reproduce in their own words, makes it necessary to give close attention.

14. The strengthening of the physical and mental nature will of course increase the power of giving intense and sustained attention. The teacher should learn two

lessons from this fact : first, the lessons that require the closest attention should be given in the morning while pupils are fresh and vigorous ; second, that it is the teacher's duty to develop the physical as well as the intellectual natures of his pupils.

15. Distributed attention may be developed by requiring every pupil to fix the eye on one object, and name as many more surrounding objects as possible while looking fixedly at one. It will be found that the more intense the attention given to one thing the more exclusive the attention in regard to other things,—that is, the smaller the circle within which we can be conscious of the existence of separate objects. The larger the range of vision the more indefinite will be the attention possible to such object.

16. The power to resist distracting influences should be developed. The teacher can train his pupils to resist the tendency to yield instinctive attention to what goes on around them by systematic practice in resisting consciously. With little ones he should begin by very simple steps in resistance. For instance, if a door is opened, or a noise made at the rear of the school-room, every eye instinctively turns in the direction of the door, or of the noise. Regular practice should be given in keeping the eyes fixed on a single object indicated by the teacher, while a series of noises or movements are made that would naturally cause the heads to turn to see what was the cause of the disturbance. Power to refrain from the external indications of inattention will gradually develop the power of the will in resisting distracting influences either external or internal.

17. The method of training the attention may be summed up in the brief statement: We learn to attend by giving attention. Attention should be made a habit. Either attention or inattention may become habitual. If children, when young, are allowed to develop habits of inattention it will be very difficult to overcome these habits afterwards. The power of the habit of attention may be made so strong as to be a controlling influence for life. The habit of attention at first develops slowly and perhaps with conscious effort, but at length it becomes automatic and intuitive in its action, so that we can give executive attention to the work we have in hand, and at the same time conduct a conversation on some entirely different subject. The great aim of the teacher should be to form the habit of concentrating the attention.

A teacher should keep "extra" work on the black-board for those who get through with their work quickly, so as to prevent their acquirement of habits of idleness.

Chapter XX.

GENERAL SUGGESTIONS REGARDING ATTENTION.

1. Get the Sympathy of your Class.—If your pupils are interested in you, they can be more easily interested by you in their lessons. The love of approbation is a strong motive, if the teacher is liked by the pupils. The desire to please a kind teacher will lead to great efforts to concentrate the attention on the subject he teaches. Teachers should strive to be cheerful, kind, courteous, polite, and discriminating in all their intercourse with their pupils in and out of school. “Good mornings” are easily given, but not easily forgotten. The child should be so treated as to leave no doubt in his mind as to the tender regard of his teacher for him and his kindly interest in his welfare and progress. It is only thus that the necessary condition of calmness of mind can be secured, and that co-operative effort between the teacher and the pupil without which pupils cannot learn. The worst-mannered and most vicious children need our affectionate interest most. Our liking for our bright, attractive, and obedient children is too often mere selfishness. We like them because it is a pleasure to do so. There is no unselfish desire to purify, or elevate, or strengthen the child in such a love. The depraved, ill-tempered, disobedient children need our sympathy and

love more than any others, and it pays to give it to them. It pays because a disobedient child is often an able child. It requires force and independence of character to be rebellious, and genuine sympathetic interest will make the force and independence powers for good instead of evil. But loving work done for the unattractive or repulsive pays its highest reward in the development it brings to the teacher. No one can ever describe to another the joy of such unselfish love.

2. Get the Confidence of your Class.—Let them see not merely that you regard the subjects you teach as of great importance, but also that you arouse no inquiring interest whose questions you cannot answer. Be prepared with your work; never hazard a guess. “What is a mosque?” said a boy. Strange to say, the teacher did not know, and was not honest enough to confess his lack of knowledge. He risked his reputation by a guess: “Oh! a mosque means a kind of sofa or lounge used in Eastern countries.” That class could not have confidence in that teacher after such an answer. There can be no disgrace in not knowing all things; but it is discreditable to be dishonest in assuming to know that of which one is ignorant. Acknowledge frankly your lack of information in regard to any question which comes up unexpectedly and which you have not before considered. If you do so your pupils will have implicit faith in you, when you assume to speak definitely.

3. Be Magnetic.—It is not enough to merely attract a pupil’s attention, it must be *held*. The teacher’s man-

ner has a good deal to do with holding the attention of his class. He should for the time make the pupils forget their individual personality, and become one in aim and purpose with himself. How can this be done?

1. The teacher must understand his subject and have his lesson arranged so that he is not conscious of mental strain in teaching it.
2. He must believe his lesson to be important.
3. He must be earnest and enthusiastic, in order to stir up a corresponding zeal on the part of his pupils.
4. He must not be listless, cold, formal, or mechanical in his teaching.

4. Think out each Lesson for Yourself.—Do not merely memorize lessons, or depend upon those prepared by others, however good they may be. Let the lesson become your own by a careful process of thought, even though it may not be original thought. Studying a lesson by repeating the thoughts in logical order, and carefully considering their relationship to each other and to the general aim of the whole lesson, increases the magnetic personal power of the teacher, and doubles his attention-gaining and attention-holding power. There is as much difference in the personal influence of a teacher whose lesson has been thought out carefully, and that of one whose lesson has been learned by rote, as there is between the attractiveness of an orator who speaks without notes, and the man who reads his sermons or speeches. The one teacher can give his attention to his class, the other must attend chiefly to his lesson.

The difference in the effect produced by the two ways of teaching is much greater with children than with adults.

5. Be Sure that Pupils Understand Clearly the Work they are Doing.—They cannot give intelligent attention to what is indefinite or confused. Adults are liable to use words which are perfectly incomprehensible to children. Teachers are very likely to forget the difficulties in their own early experience in study, and they usually proceed too rapidly, and fail to adopt the steps in learning to the capacity of the little climbers.

6. Do Not Depend too much on Simultaneous Answering.—If you do, you cannot be sure that your pupils are giving intelligent attention. They may join mechanically in repeating an answer without thinking. Pupils may be taught to speak out by simultaneous answering, and time may sometimes be saved by its use. But the answering in such cases cannot be the result of independent thinking. Simultaneous repetition and simultaneous answering must not be confounded. The frequent repetition of anything to be learned by rote is often the quickest way of impressing it on the minds of pupils. All the members of a class, if well trained, may responsively repeat brief statements made by the teacher while teaching. They may even answer together when being reviewed, if the teacher wishes the answer to be given in a set form of words. Even then there is a danger that the indolent will wait for the key-notes from the leaders. They should never answer together while

being taught, unless their answers can be given by a single word. If the answer to a teaching question requires independent thought, and it is of little consequence unless it does, it should not be answered simultaneously, as each pupil may have a different answer. If the answers are certain to be literally the same they may be given at the same time. Even simultaneous repetition requires great care. The teacher must speak with the greatest possible precision and distinctness, and he must listen with the utmost care to the responses made. These responses should be given in a natural tone of voice. Classes that are allowed to repeat together are liable to acquire a loud, drawling manner of speaking that is very disagreeable. Every teacher should remember, however, that in its most perfect form simultaneous answering is the most mechanical kind of teaching. It is word-grinding, and generally the words, even if correctly uttered form but an "unmeaning jargon" to the pupils.

7. Be Patient even if Children have Difficulty at first in Giving Fixed Attention.—The power to give attention, like all other powers, grows by practice. It is difficult for a child to confine its attention even to an attractive object; it is much harder to attend to a formal lesson. Attention should become a habit, and habits require time to form. Teachers should be satisfied at first if their pupils are willing to attend.

8. Show by your Manner that You Regard the Lesson as Duly Important.—If the teacher manifests a decided

interest in a subject, his pupils will naturally have their interest aroused, and interest is the parent of attention. There is no subject of school study in which the investigations of modern times are not opening up new treasures for the study of teachers. The teacher who has fresh thought for his pupils never fails to gain attention. Dr. Arnold studied his old subjects and things related to them, so that "his boys might drink from a running stream." A new fact in relation to any subject will arouse an energetic action of the teacher's own mind which will give him increased power to awaken and sustain attention. The fresh thought will form a nucleus around which the thought gained by former study of the subject will group itself by the law of association of ideas, and will thus become the surest and most logical way of recalling an old lesson.

9. Attention Cannot be Gained and Held by Scolding, Threatening, Demanding it, or Pleading for it.—The impatient teacher who scolds, threatens, or shakes a child to make him attentive usually prevents the pupil from fixing his attention. If the child is at all nervous, his mind becomes a blank to all but terror. The sequence of intellectual action necessary to recall by conscious effort is then perfectly impossible. The wandering mind may be brought back from its reverie, by a sudden, vigorous, and even startling action on the part of the teacher, but in order to guide the awakened mind in the direction desired by the teacher, his attitude towards the pupil must be one of sympathy and not of coercion. Locke says: "'Tis, I know, the usual method of tutors

to endeavor to procure attention in their scholars and to fix their minds to the business in hand, by rebukes and corrections. But such treatment is sure to produce quite the contrary effect. Passionate words or blows from the tutor fill the child's mind with terror and affrightment, which immediately takes it wholly up and leaves no room for other impressions. I believe there is nobody that reads this but may recollect what disorder hasty or imperious words from his parents or teachers have caused in his thoughts; how for the time it has turned his brain so that he scarce knew what was said to him. He presently lost the sight of what he was upon, his mind was filled with disorder and confusion, and in that state was no longer capable of attention to anything else."

10. The Unfamiliar attracts our Attention.—Strange sounds, new faces, odd costumes, novel sights, always awaken our interest and rivet our attention. We do not note the things to which we are accustomed. From these facts the teacher should learn to try to treat his pupils to a logical succession of surprises, objective and subjective. He should also learn to vary as much as possible his plans for conducting his lessons. The only limitation to the law of attractiveness in the unfamiliar is the fact that new things or truths may be so strange as to be unrelated to any thought already in the mind, and consequently the mind may be unconscious of them because unable to recognize them. This is the foundation principle of the law that we should proceed from the known to the unknown in teaching.

11. We Attend to what is Done Suddenly.—We fail to note that which occurs gradually. Parents do not see the gradual growth of their children, as clearly as friends who see them only periodically. The teacher may fail to realize that his class has grown noisy gradually, but will be certain to hear the noise of a falling slate. The teacher in a poorly ventilated school may have no idea that the air is impure, but a visitor detects the unpleasant odor at once. The teacher would have done so too if the foul condition had developed suddenly by a break in a gas-pipe or drain. There may be value, as has been pointed out already, in a sudden and even startling action on the part of the teacher, if the class, as a class, is listlessly dreaming. But the good teacher will rarely need to use this method of gaining attention, and no class can be startled into attention many times unless the teacher has something ready to supply the demands of the awakened mind.

12. Pupils Delight to do those Things they can do Well.—It should never be forgotten that the most attractive object or subject, whatever the cause of its attractiveness, stimulates the mind to receptive attention only, or at least to nothing beyond investigating attention. The fullest degree of attention can be given only in arousing the mind to executive work. Whatever attention a mind can give when receiving knowledge from another person, it can give closer attention when making investigations for itself, and it can give still more intense attention when putting knowledge into practice, if the thought in connection with the work to be done

is so perfectly familiar as to be used automatically, without distracting attention from the executive process. Pupils should have executive mental gymnastics in working the simple rules of arithmetic rapidly for the purpose of developing the power of attention until the last day of their school life

13. The Power to give Attention Depends Somewhat on the Physical Condition.—It is difficult to secure interested attention from a sick or tired child. The child in the morning is keenly attentive to all that goes on around him, but is listless and indifferent when wearied in the evening. His attention is given to even trifling matters when he is fresh and full of vigor, but when sick or fatigued it requires a strong attraction or inducement to arouse him.

Teachers should learn from this fact to arrange their programmes so as to have their pupils study those subjects requiring the most intense attention early in the day.

14. As the Sphere of Observation is Limited the Attention becomes more Definite.—The Indian sees the details in connection with his own life and surroundings much more accurately than the most cultured white man. The botanist sees distinctions in the shape color, and, size of plants unnoticed by his companion who is not a botanist, not because he has been trained to observe better than his friend, but because his range of observation is limited to plants. He himself is blind and deaf to a thousand things that his companion sees and hears. Long practice

in giving attention to the study of our choice makes attention first easy and then instinctive, and instinctive attention is always more intense and productive than controlled attention can be. An expert in any department of life-work sees without effort what others may be unable to see at all.

15. **The Truest Reasoning is that Based on Instinctive Attention.**—Even the child's conclusions are true and clear within the limit of his intellectual power. The trained detective not only sees indications instinctively, but he draws conclusions regarding the commission of crime much more accurately than the best trained logician's.

The street arab, however, can instinctively outwit the detective, because his sphere is more limited and therefore his attention is more instinctive. The dervis in the story of the "Lost Camel" explained to the owners of the camel the fact that he could describe the camel without ever having seen him, by saying: "I have been much amused with your surprise, and own that there has been some ground for your suspicions; but I have lived long, and alone; and I can find ample scope for observation, even in a desert. I knew that I had crossed the track of a camel that had strayed from its owner, because I saw no mark of any human footsteps on the same route; I knew that the animal was blind in one eye, because it had cropped the herbage only on one side of its path; and I perceived it was lame in one leg, from the faint impression that particular foot had produced upon the sand; I concluded that the animal had

lost one tooth, because wherever it had grazed, a small tuft of herbage was left uninjured, in the centre of its bite. As to that which formed the burden of the beast, the busy ants informed me that it was corn on the one side, and the clustering flies that it was honey on the other."

The most definite conceptions result from instinctive attention; and the more definite our conceptions the clearer our reasoning will be. When a man has for any reason been led to give attention to a subject for a lengthened period, the attention ultimately becomes instinctive, and his progress in learning or in thinking regarding this subject becomes correspondingly rapid.

16. Persistent Attention to one Subject makes it Difficult to Attend to Other Subjects.—There is a tendency in the mind to pay attention to the kind of stimuli to which it has recently been most accustomed. This tendency increases as we advance in years. The child's mind possesses almost unlimited spontaneity. He has at first no mental habits. The elasticity of the mind grows less as we grow older, and most men find it very difficult to turn their attention at will from business or study, if their work or study is at all engrossing during business or study hours. The mental powers seem to converge, after a time, to the leading central channel of mental operation. This tendency needs careful watching, as it tends to make men narrow. The ideal mind is the one whose concentration is complete, but whose relaxation is as perfect as its intensity of application.

There can be no doubt, however, but that the giving of attention regularly to one class of stimuli, must necessarily tend to make the mind oblivious to stimuli of a different character. Reasoning, or paying attention to the internal, will gradually lessen our interest in the details of the external, and therefore will make us pay less attention to the world of objects and operations around us. The metaphysician commonly uses his eyes when he is out walking, only for the purpose of guiding him so as to avoid colliding with men or things. It is a pity that men should ever cease to be interested in external things. One set of mental powers may rest, while another set is being used. Close attention to internal stimuli should be alternated with investigating attention to external stimuli. This will preserve the buoyancy of the mind, and enable it to retain its freshness and vigor.

17. The following suggestions are selected from answers given by teachers at the examination of the Sunday School normal class at Chautauqua, in answer to the question:

“How may the attention of a restless class be secured?”

1. “Generally by teaching in a dramatic, pictorial way; make the truth vivid. Let the figures stand out from the canvas in bright colors and correct perspective, and anybody will look,”

2. “By saying or doing something that cannot fail to interest, at the first of the lesson. Having secured attention, endeavor to hold it by interesting them all the

way. Beware of a flagging for a moment. If you clothe the dry bones of a lesson with flesh and blood, you can hold the interest."

3. "Never by telling them to pay attention, or by severe words, but by entertaining them; putting the lesson in such way that it will command their attention. Keep them so busy they will not have time to be inattentive. Always have plenty of work prepared for your class."

4. "By introducing a story bearing upon the lesson, or by showing a picture or drawing a map."

5. "Get them interested. To do this let the teacher show his interest in the lesson. Let him be thoroughly posted in the same. Let him use quick, pertinent questions, and well-selected illustrations. Let him keep every one busy, or expecting something to do every moment, or expecting to hear something attractive."

6. "There are various devices for particular cases and times, but in general let the teacher be full of the subject in hand, and his earnestness will be contagious."

7. "First see that they are comfortable. See, then, that you are not prosy yourself, that you are giving them enough to do. Illustrate your point from common life, with which they are acquainted."

8. "By giving plenty of fresh air, exercise of body or mind, or both, and by being a good teacher, which answers the whole question."

9. "Sometimes by varying the exercises, stopping short and asking a curious question, telling a story, using tact."

10. "By tact in teaching."

11. "By some apt illustration. By a change in the manner of teaching."

12. "Sometimes it may be secured by waiting for them to become quiet and attentive. Give them something to do. Let it be something you know they can do, and again something that will require thought and concentration. Let them know that you are really anxious about them, and show them your sympathy."

13. "Attention may be secured by the intense interest which the teacher manifests. By variety. Sometimes throwing the lesson into the form of a story with question and illustration, giving each one something to do."

14. "By giving special topics in the next lesson, expecting each to tell all he or she can about it. Give No. 1 the persons, No. 2 the places, etc. No. 5 tell the story of the lesson, No. 6 give an illustration. Another way is to know the lesson and enter into it heartily."

15. "By gentleness, a lovingly manifested spirit, by word and act. By inciting interest. It never failed. It can't fail."

16. "By being interested yourself, and teaching in such a way that they can understand what you say. By making a few points and using the blackboard."

17. "By giving each one work to do. By object-teaching. By exciting to competition and rivalry. By having something to teach, and giving it in the most attractive and forcible manner possible."

18. "By using tact; change of posture; appealing to curiosity. Giving them something to do."

19. "If the eyes of a class can be secured, their minds

may be fixed. Therefore blackboard or other methods of object-teaching are useful. Strive to excite their curiosity. Tell them a story. Ask them questions and get them to give their own experience."

20. "By questions necessitating thought and yet within the ability of pupils to answer. By some unexpected question or illustration. By being wide-awake. By convincing the class that you understand your business.

21. "Be quite yourself. Be prepared so you can give full attention to them. Use some incident that will interest, and yet that will enable you to proceed naturally to your work. Never demand attention."

22. "In a thousand ways by using the principle of fact. Tell a story, do anything that will make the class interested in the lesson, or rather first in the teacher and then in the lesson. Do not scold, almost anything else may be done."

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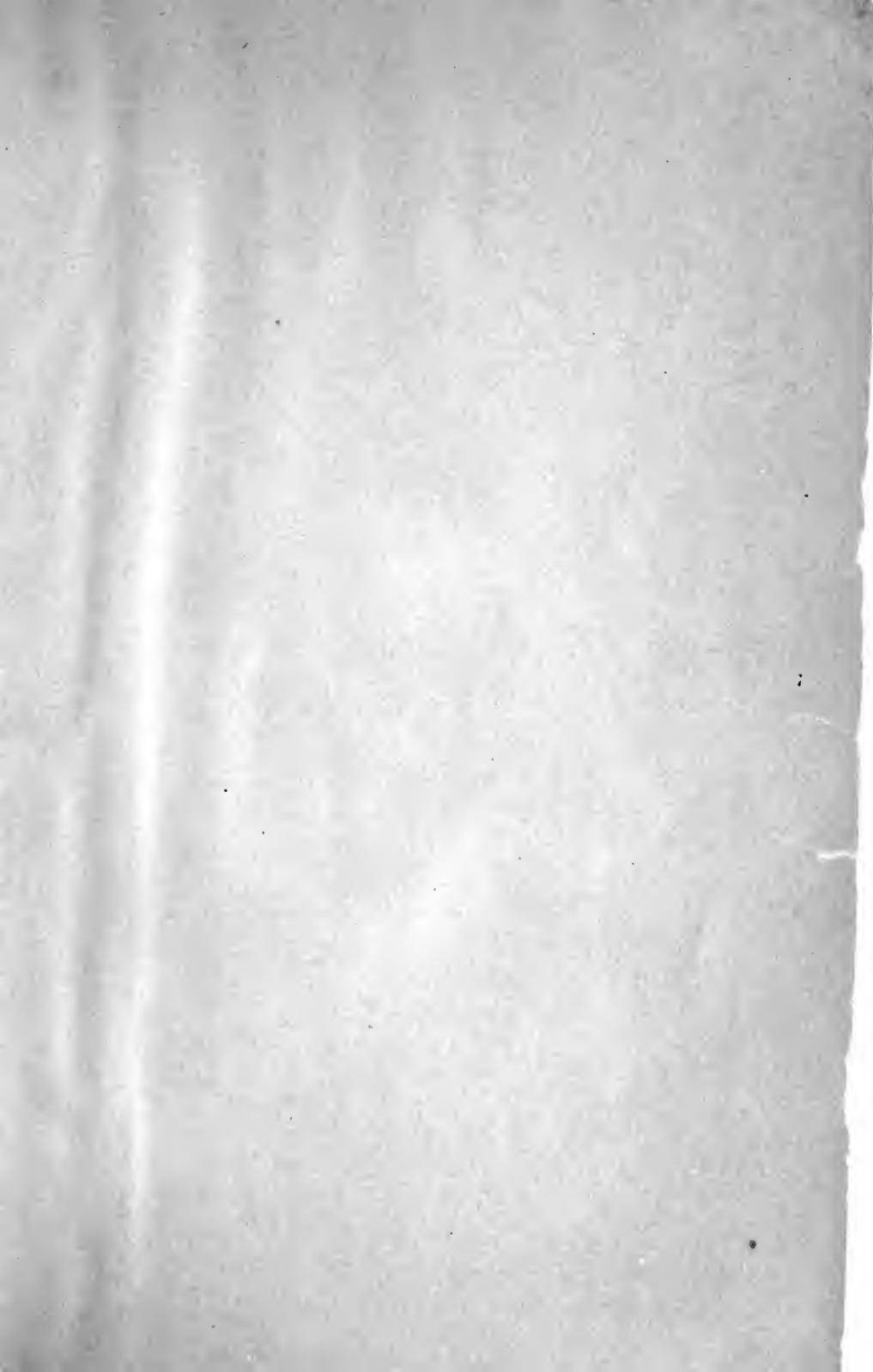
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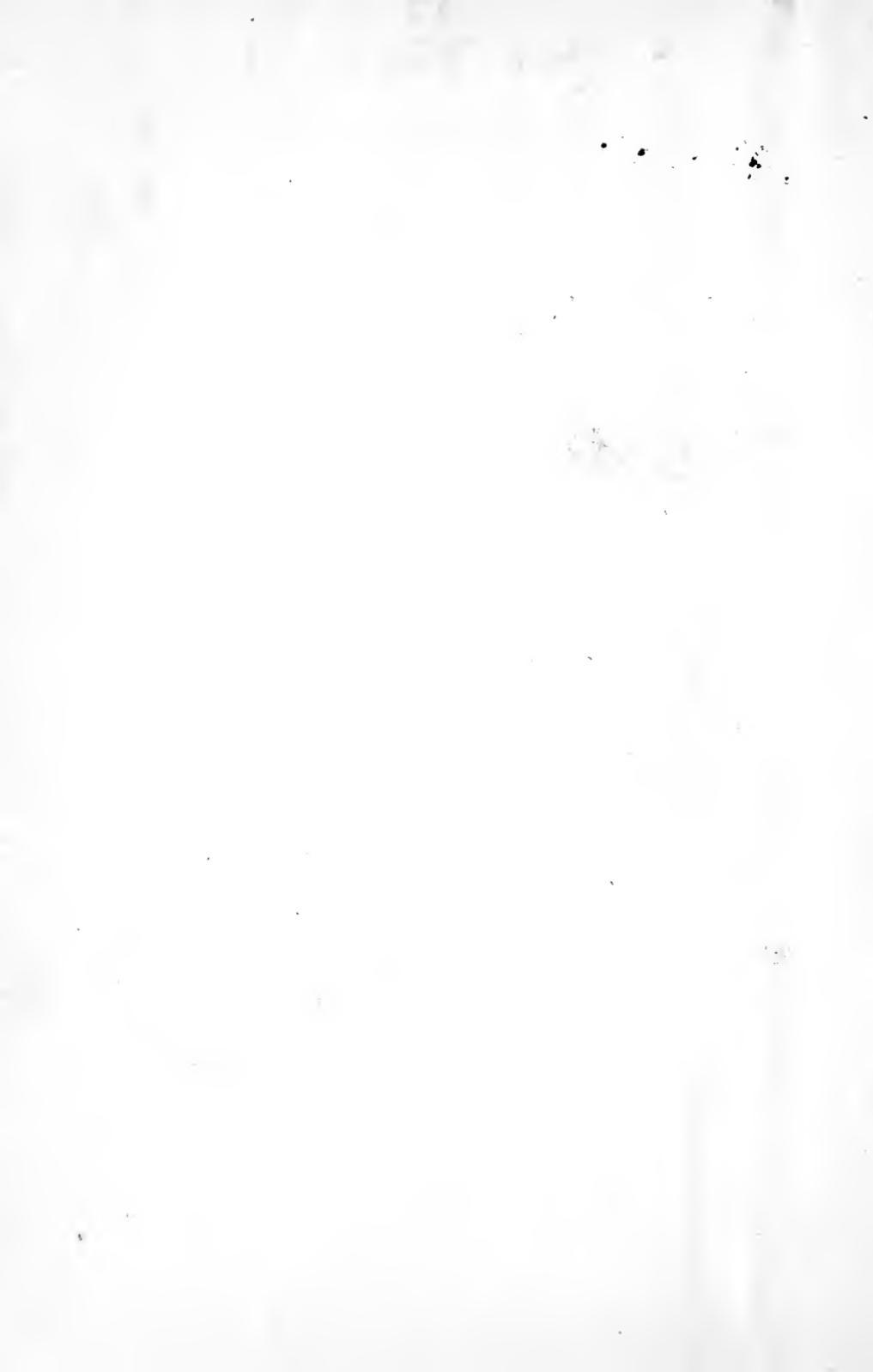
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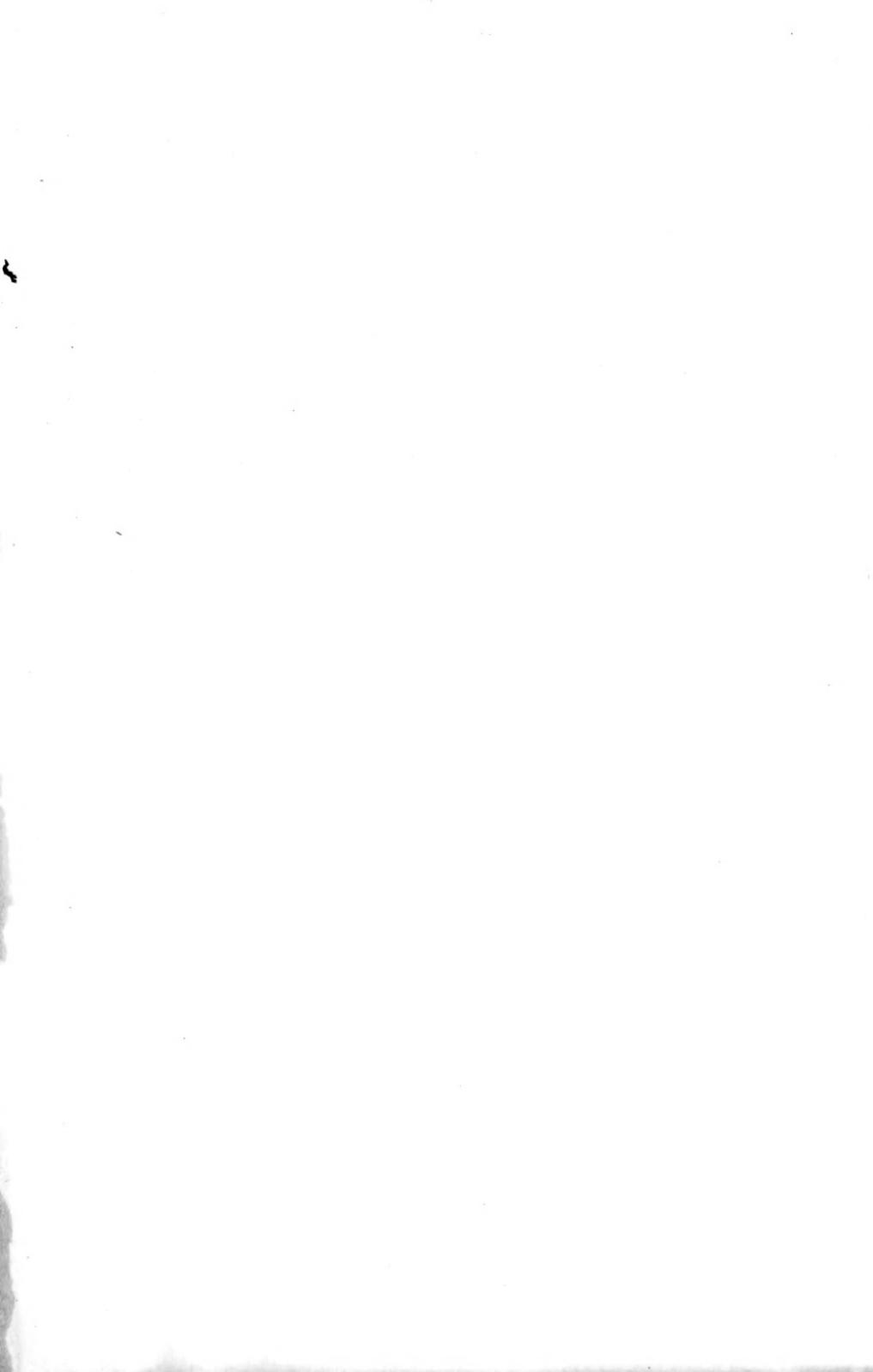
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